ENGINEERING NEWS-RECORD

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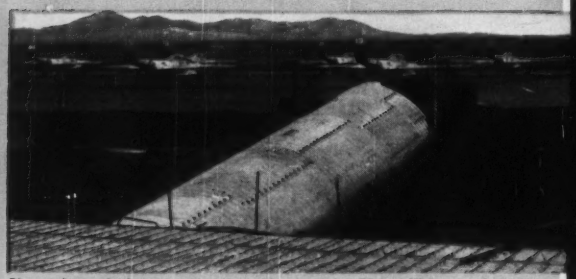
New steels are born at Armco

Engineers find Armco MULTI-PLATE Pipe solves unusual problems, too

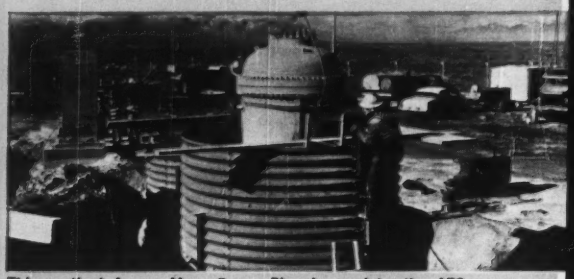
For many years, Armco MULTI-PLATE® Pipe has proved ideal as a drainage structure for highways, railroads, industries and municipalities. But frequently, engineers find these structures offer important design, strength or cost-saving advantages in *unusual* applications, too. Photographs on this page show some of these uses. May we help you determine whether MULTI-PLATE would solve *your* unusual problem?

Galvanized MULTI-PLATE Pipe is supplied in a wide range of diameters and gages. Assembly is by bolting together curved, corrugated metal plates. For engineering and dimensional data, write for catalog. Armco Drainage & Metal Products, Inc., 5480 Curtis Street, Middletown, Ohio.

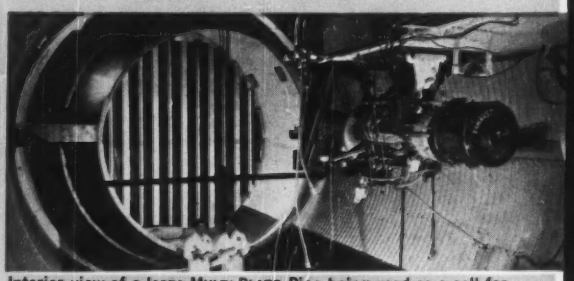
High on a mountainside, this MULTI-PLATE Pipe collects rainwater for a remote military installation.



Shown here during construction, MULTI-PLATE Pipe will be used as an exit ramp for SAC flight personnel.



This vertical Armco MULTI-PLATE Pipe is used by the AEC as a gallery for an atomic reactor.



Interior view of a large MULTI-PLATE Pipe being used as a cell for the testing of turboprop engines.

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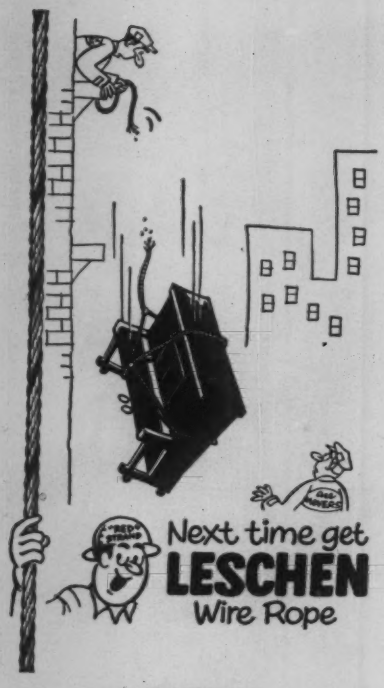

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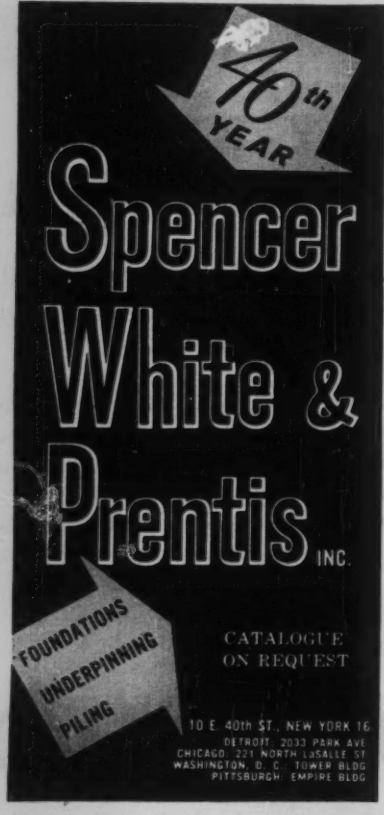

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ENGINEERING NEWS-RECORD, Vol. 164, No. 26, June 30, 1960

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. Publication Office, 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or change in address. **Executive, Editorial, Advertising and Circulation Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** OFFICERS OF THE PUBLICATIONS DIVISION: Nelson L. Bond, President; Shelton Fisher, Wallace F. Traendly, Senior Vice Presidents; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. OFFICERS OF THE CORPORATION: Donald C. McGraw, President; Joseph A. Gerardi, Hugh J. Kelly, Harry L. Waddell, Executive Vice Presidents; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary. **Subscriptions are solicited only from persons with identifiable commercial or professional interests in construction and building. Position and company connection must be indicated on subscription orders.** United States subscription rate for individuals in the field of this publication $6.00 per year, single copies 50 cents; foreign $20 per year, payable in advance. Second-Class mail privileges authorized at Albany, New York. Printed in U.S.A. Title registered in U.S. Patent Office. ©Copyright 1960 McGraw-Hill Publishing Co., Inc. All Rights Reserved.

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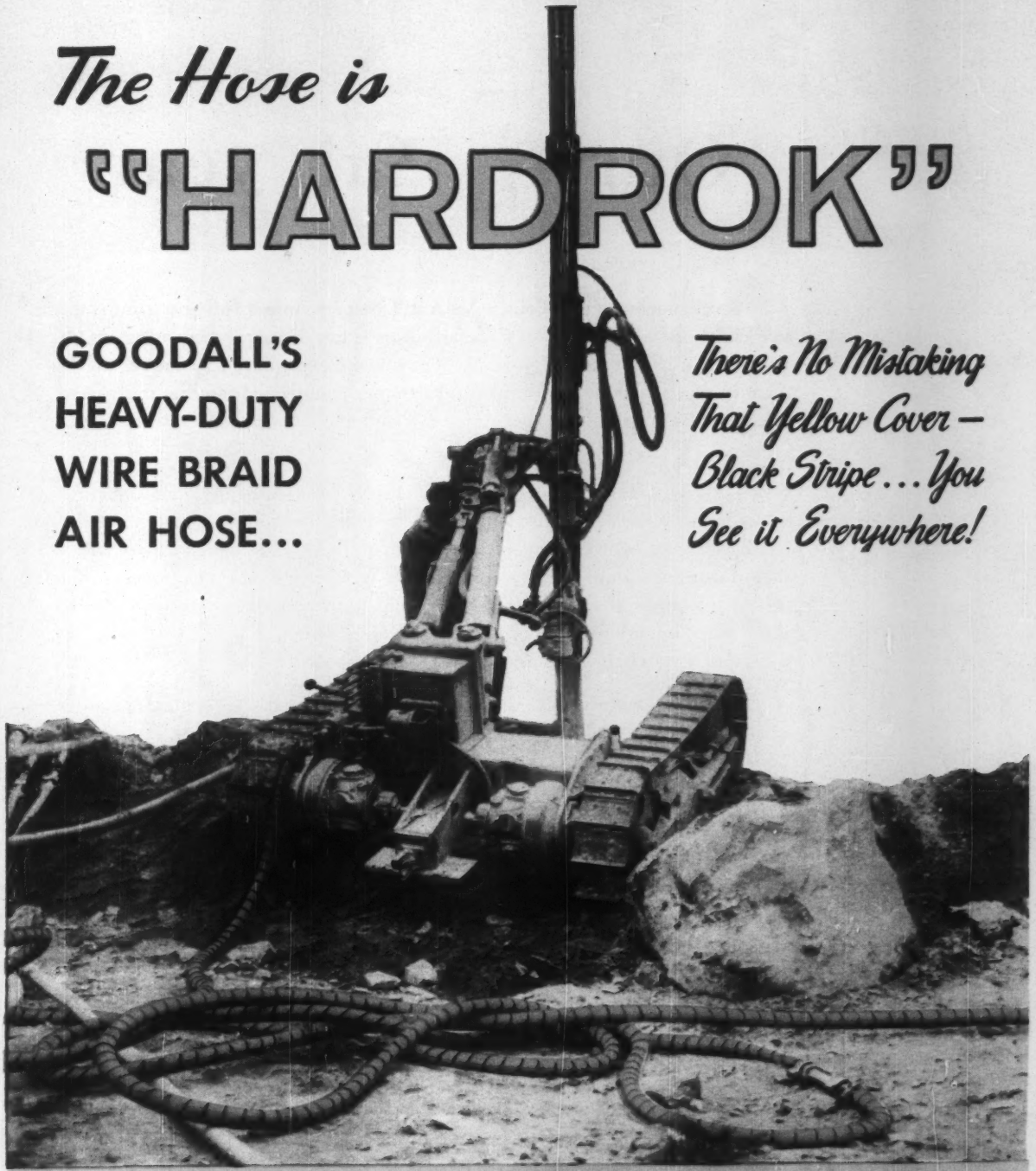

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This building of the company to a position of substance in the industry rested largely with one man, William R. Alcorn, who joined the organization in 1908 and was elected president in 1924. Mr. Alcorn's business acumen led him to direct the company's primary sales efforts to the field of agriculture where manufacturers of equipment and machinery were expanding at an unbelievable rate. Tousey's fine weather-resistant finishes were well received and became the standard of quality for many companies, most of which are large users of these products today.

To handle the greatly increased volume, Tousey added several building to the already substantial looking establishment. New equipment was purchased, installed and put to use as rapidly as possible. Three laboratories were added, being staffed with technical directors and ample help. Raw material control was set up, research for new products was expanded and a vigilant eye was kept on the day to day output of finishes to insure quality products.

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(to be continued)

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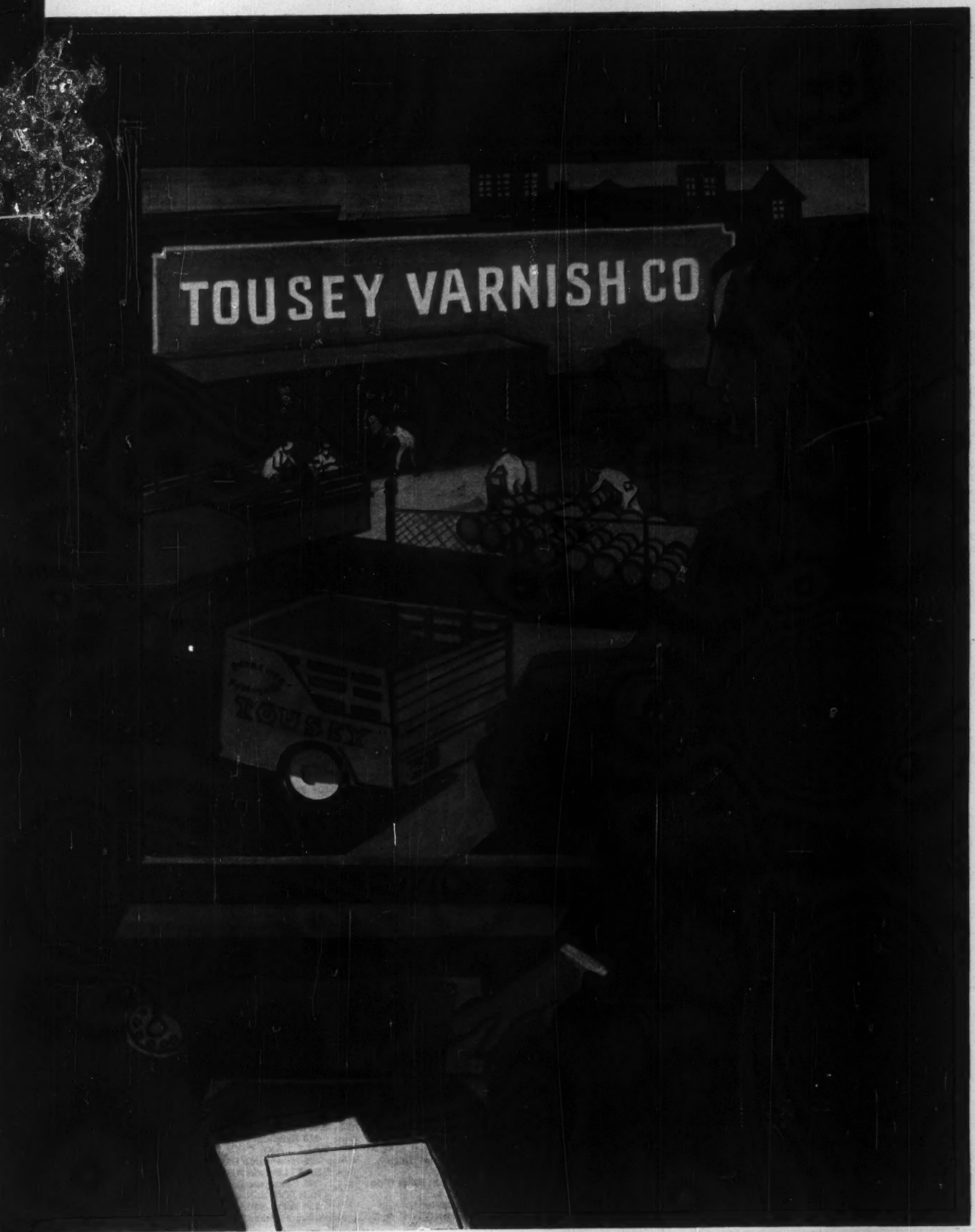
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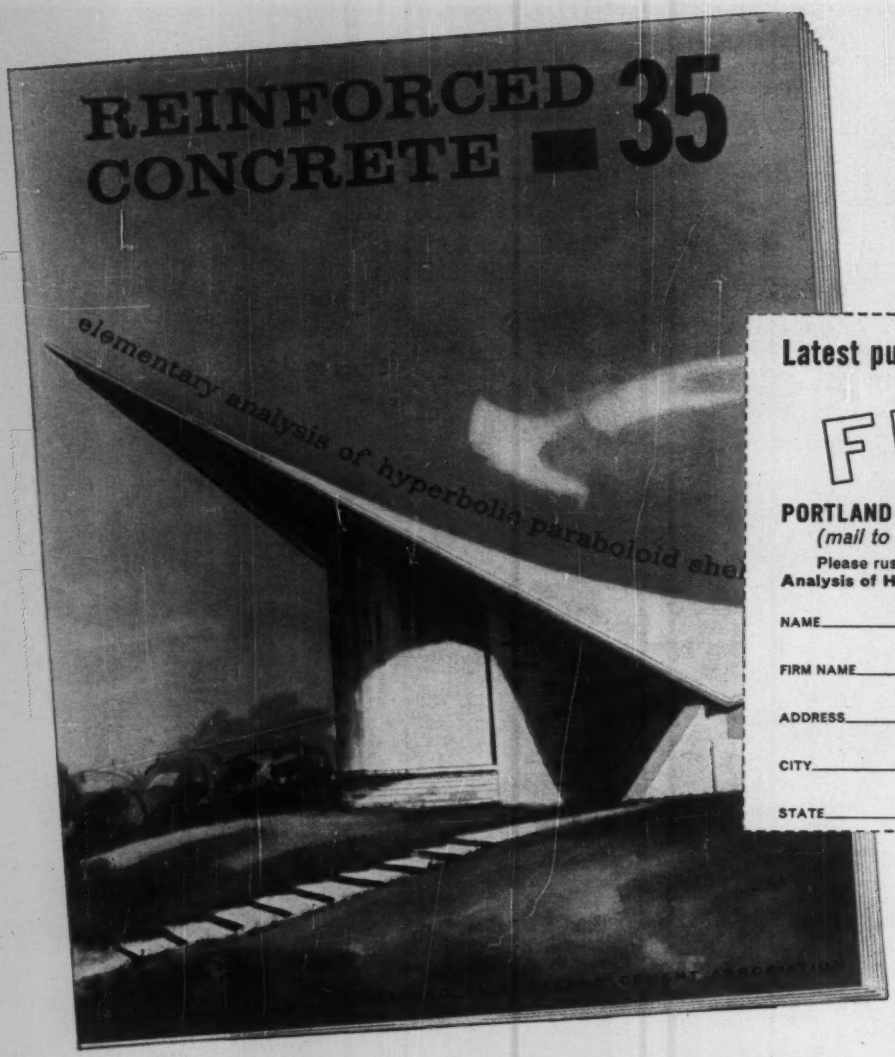

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Reader Comment

Blasted Runway Defended

SIR—The article "Jet Blast Rips Asphalt Runway" (ENR May 26, p. 26) was of some concern to me and engineer associates.

It appears that the particular area of pavement described should have been commended for its 20 years of life rather than condemned when distress occurred due to operations of modern-day aircraft. If the maintenance costs over the 20-year period have been that of only several seal coats, then further commendation is considered warranted.

It was stated that the exact cause of the breakup was not known; but it would appear from the description of the conditions that this would be quite obvious, considering that water had penetrated into the base course and there was an alligator pattern of cracking on the surface of the base. These factors alone would provide the condition necessary to produce the distress that occurred.

The section was probably designed to support aircraft of 30,000 lb gross weight with tire inflation pressures of 60 psi, while current aircraft gross 110,000 to 200,000 lb with tire inflation pressures nearing 200 psi. If the airport engineer of today believes he can continuously operate current aircraft on pavements designed for light loads and not have severe distress or maintenance problems, then he is in dire need of an indoctrination course on current pavement design criteria.

Z. B. FRY
Vicksburg, Miss.

Editor's Note: The story did not condemn the old asphalt pavement, which had indeed rendered many years of useful service. It simply reported what took place.

Love, Mortality and Housing

SIR—The article on housing markets, which appeared in the April issue of the Survey of Current Business, and which you abstracted faithfully in your June 2 issue, pointed out that births had increased sharply since the early Thirties, ergo marriages would increase sharply very soon, ergo the market for housing would be rising noticeably before 1965.

Unfortunately, there are offsetting factors which were not mentioned. Until recently the number of marriages exceeded the number of deaths. This was due to two things: First, earlier marriages, which increased the number of marriages per year while the marriage age dropped but will reduce the volume later because marriages which under previous patterns would have occurred in the mid-Sixties have already taken place. The recent excess of marriages over deaths was due, secondly, to the postponement of death, by better living conditions, and better medical and hospital care. But these postponed deaths are occurring now.

With these two factors weakening, deaths now outnumber marriages by 50%. The number of marriages is increasing, but the number of deaths is increasing far faster. Existing occupied houses are being freed for new families at an accelerated pace. This may reduce the market for new homes below the level suggested.

There are factors which will check the marriage rate, too, which were not mentioned in the article. For instance when 18-year-old girls marry, they tend to marry 21-year-old boys. But there will be ten 18-year-old girls for each nine 21-year-old boys, for a time. Marriage rates will be determined as much by the number of men reaching 21, as by the number of girls reaching 18 in any year. This, with other things, may slow the marriage rate below the figure suggested in the article.

Forecasting the housing market is an esoteric business. The crystal-ball method has great advantages.

ROBINSON NEWCOMB
Robinson Newcomb Associates
Washington, D. C.

KA-MO Takes a Bow

SIR—In the article, "Preboring Sinks Piles the Quiet Way" (ENR Apr. 28, p. 25) the earth auger used was manufactured by the KA-MO Tools Department of Kwik-Mix Co., one of the divisions of Koehring Co.

We call the omission of these names to your attention since your editorial policy, as we understand it, is to identify special equipment, such as this auger, when it is the primary feature of an article.

ANDREW R. HOLUM
Advertising Dept.
Koehring Co.
Milwaukee, Wis.

Editor's Note: Right. The names should have been given in this case.

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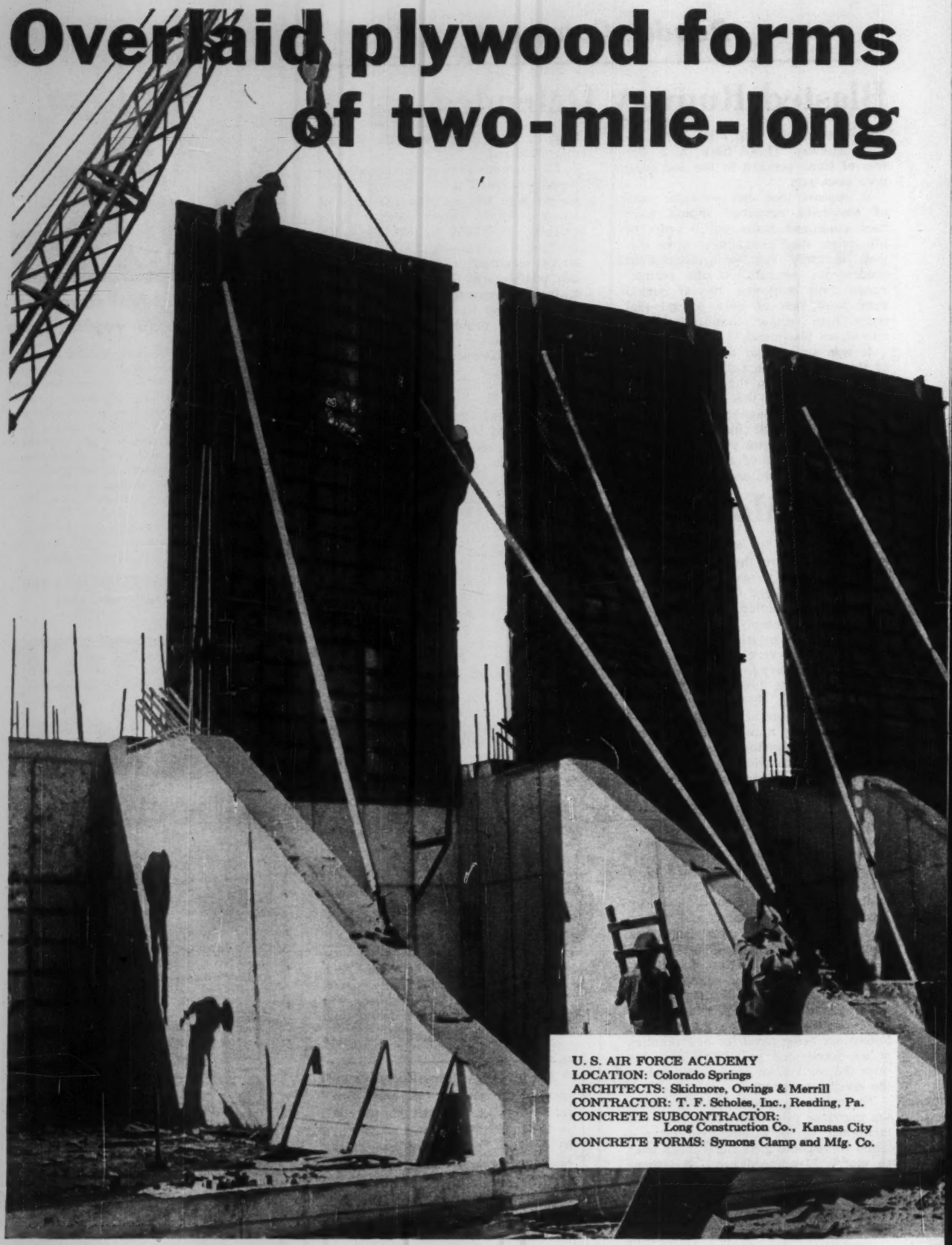

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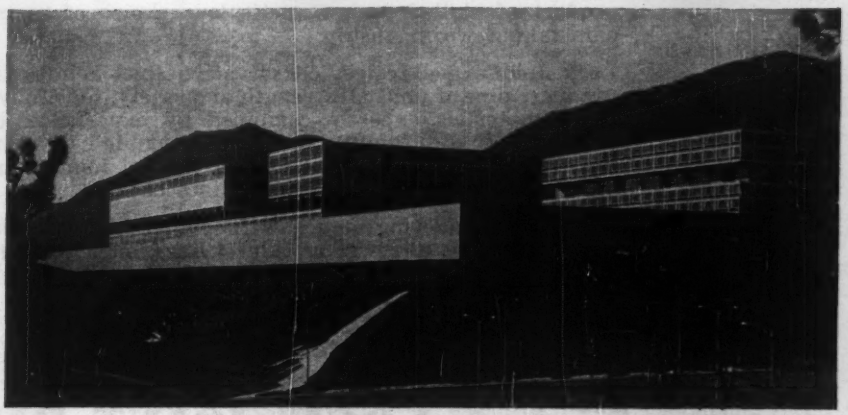

In design and material, the wall is architecturally harmonious with the raised geometric campus it encompasses. Overlaid plywood forms insured ultra-smooth concrete, and cut labor time because of rapid re-use.

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ENGINEERING NEWS-RECORD

Vol. 164, No. 26 June 30, 1960

Number copies printed this issue 86,315

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Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

HOUSING STILL SLUGGISH—Although reports to ENR on mass housing contracts continue to run well ahead of last year, there's no trace of the indicated activity in the latest Census Bureau count of starts. May starts—125,700 units—were 18% below May '59, and down slightly from April at an annual seasonally adjusted rate of 1,322,000. Volume of contracts for first 25 weeks of this year is up 36% over '59.

MARRIAGE OF CONVENIENCE?—A new equipment company may be born out of huddles between officials of Blaw-Knox Co., Pittsburgh, and T. L. Smith Co., Milwaukee. Both firms manufacture pavers and mixers, among other things, but a full-fledged merger is not in prospect, officials say. They're talking about a third company, jointly owned, that would combine the construction equipment facilities of each. The parent firms would maintain their corporate identities and continue in other activities independently.

ROADBLOCK—Highway construction in Delaware screeched to a dead stop last week when the General Assembly recessed without voting capital improvement funds for fiscal '61, which begins July 1. No new contracts will be awarded without the funds.

MORE SUGAR FOR DESALTING?—A Senate subcommittee has approved an additional $20 million for the Interior Department's saline water conversion program. That's more than double the amount now available. If Congress can squeeze the bill through before adjourning, there'll be pilot plants in the works for three or four more processes.

RAPID RAPID TRANSIT—A $529.7-million transit system that would carry people in and out of Los Angeles in air-conditioned, rubber-tired cars on concrete tracks at speeds up to 80 mph was recommended to the city's Metropolitan Transit Authority last week. After eight months of study, Daniel, Mann, Johnson & Mendenhall proposed four lines (elevated and at grade) with a total length of 74.9 miles (ENR Feb. 11, p. 24).

WAIT 'TIL NEXT YEAR—Postponement of a meeting of U. S. and Canadian negotiating teams working on an agreement for Columbia River development has probably killed any chance for action this year. The meeting, scheduled for last week, has been put off until July 19—too late to get anything before the Canadian Parliament and the U. S. Congress.

CAPS OFF—While construction goes on around them, Western Electric Co. engineers are load-testing every pile of Bell Telephone Labs' Holmdel, N. J., building project. Some pile caps already in place are coming off for the tests. Object of full-load tests is a check against design before superstructure work begins.

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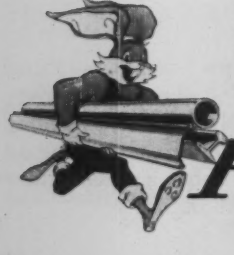

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WASHINGTON OBSERVER

- **Military construction almost set**
- **Push on for Burns Creek Dam**
- **Lower interest on Upper Colorado**

● **Congress will complete work on military construction by the weekend.** The billion-dollar bill in the Senate is $191.1 million more than the $876.1 million voted already by the House. The Administration had sought about $1.19 billion.

Biggest single addition in the Senate bill is $90 million for two additional Titan ICBM Squadrons at Little Rock AFB, Ark.

Other significant items:

The Senate version of the military construction bill anticipates that the Air National Guard is being shifted to use of advanced fighter planes. This calls for $13.9 million for construction, a $6.9-million increase over the Bureau of the Budget and House figures.

For the Army National Guard, the Senate figure is $17.5 million—some $9.5 million over the House and Budget Bureau. This total would provide for construction on 107 projects in 43 states.

The Strategic Air Command would get an increase of $12.7 million to a total of $52.5 million. Among projects provided are a hospital at Dow Air Force Base, Me.; a headquarters for Glasgow AFB, Mont.; an apron at Francis E. Warren AFB, Wyo.; an addition to SAC headquarters at Offutt AFB, Neb.

● **The federal power bloc is putting on a last minute effort to get the Burns Creek bill approved.** The Bureau of Reclamation dam on the Snake River would cost over $50 million, produce about 90,000 kw.

A House Interior subcommittee approved the legislation on Monday. The full committee is being urged to okay it for a vote in the House before adjournment. The Senate has already approved the bill. The President probably will sign if the legislation comes to him.

● **New Upper Colorado River projects will have lower interest costs on power, municipal and industrial water features.** That's the meaning of a bill the President signed this week. First effect will be on the two dams to be started this year on the Curecanti reclamation project. The interest rate will be 2¾%, rather than 4⅛%, on the $75-million power allocation. Next to be affected will be Central Utah, where $100 million is allocated for power costs. Also affected will be San Juan Chama in New Mexico, which has a large cost allocation for municipal water supply.

The new interest policy conforms with the Water Supply Act of 1958. The provision was contained in a bill authorizing a Norman, Okla., water supply project.

● **Manufacturers of clay sewer pipe and others who manufacture finished products from minerals took a rap from the Supreme Court this week.** The court ruled they are not entitled to a depletion allowance based on the value of their finished product, but only on the value of the raw mineral from which it is made. The Internal Revenue Service says some 380 claims are pending, involving $380 million in revenues.

Congress this week was finishing up a tax bill containing language specifying how far up the processing line a company can go in computing depreciation allowances.

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Federal Building Plans Come Alive

Back on the old track after a four-year experimental run around the lease-purchase loop, the federal building program got off to a strong start during the session of Congress now ending.

In the first year under the Public Buildings Act of 1959, the General Services Administration and Congress worked as a team to rack up authorizations of 75 new projects worth $800 million and construction money for 22 totaling $165 million.

A slice of the cash total ($5.5 million) is earmarked for clearing the site and constructing the footings of a two-building federal center in Chicago. This project will require another $100 million of appropriated funds for construction.

For the 21 other projects in this year's money bill, however, Congress is voting this week a sufficient sum to complete construction. Amounts going to individual jobs range from a low of less than $300,000 for a federal building in Dayton, Wash., to highs of $38 million to $40 million for projects in San Francisco and Washington, D. C.

Earlier this year GSA submitted cost estimates with proposals for authorization of the projects. In all cases the estimates ran higher than the amounts granted in the appropriation bill. The House Appropriations Committee, originator of all money bills, trimmed the authorized costs by 15%. Of this saving, about 9% was based on expectation of favorable contract bid prices. The committee gained the rest by eliminating fallout shelters planned for the buildings. House members sustained the committee and passed the items as recommended.

Fallout shelters won better support in the Senate, where the Appropriations Committee restored $6.5 million of the House cuts, sufficient to provide the structural elements required for fallout protection. But the Senate group deferred $4.6 million for built-in mechanical equipment that it said could be financed and installed later. Like the House, the Senate assumed a cost savings based on bid prices, noting that GSA had agreed with the House estimates after study of current bids.

All 22 of the jobs receiving appropriated funds will go to contract within the next twelve months, construction officials believe. Designs for the buildings have been completed or have reached an advanced stage. Design of many of them, including all the large jobs, was authorized under the discarded lease-purchase program.

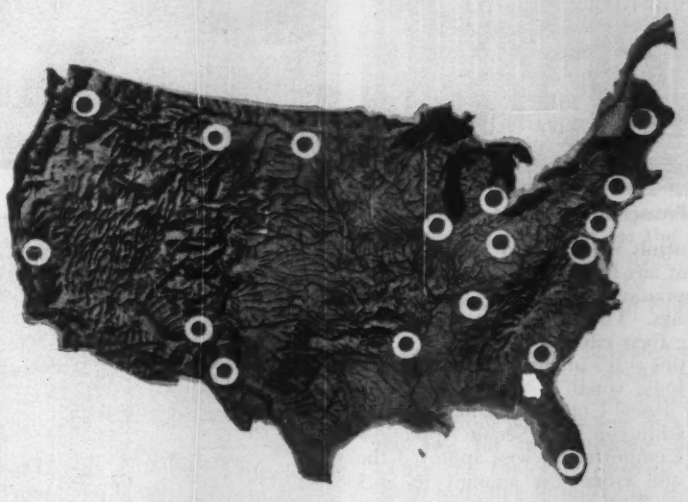
Private financing was contemplated under that program only for construction, with the federal government paying back the builder under a long-term, lease-purchase contract. Congress authorized the lease-purchase experiment in 1954 and brought it to a decisive halt in 1958. But effects of the aborted program lasted for another year while Congress codified and remodeled federal building legislation. Simplified, centralized procedures and controls were written into the 1959 act.

At that time GSA had on its books 98 new federal building projects worth $700 million, authorized for lease-purchase construction. Relatively few jobs had gone to contract. Under the new law, all the rest had to be authorized again before money could be appropriated for their construction.

Congress retained in the new law one good device that it had tested in the lease-purchase program: Proposed new building projects acquire authorization status when they receive approval of the public works committees of both the Senate and the House.

On the serious matter of appropriating money, however, there are no legislative shortcuts. Appropriations must originate in the House committee and pass through the usual procedures.

(*Turn the page*)



Where construction money is going

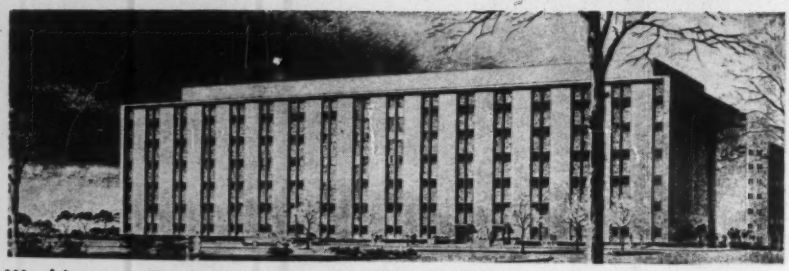
City	Amount	City	Amount
CAMDEN, ARK.	$655,050	TOLEDO, OHIO	3,980,700
SAN FRANCISCO	38,296,900	PHILADELPHIA	5,601,500
HARTFORD, CONN.	7,816,400	MEMPHIS, TENN.	10,167,150
MIAMI	7,076,250	EL PASO, TEX.	1,055,700
THOMASVILLE, GA.	1,119,600	DAYTON, WASH.	288,700
JACKMAN, MAINE	289,850	WASHINGTON, D.C.	
VAN BUREN, MAINE	297,550	FED. BLDG. NO. 8	15,794,000
VANCEBORO, MAINE	261,150	FED. BLDG. NO. 9	21,222,100
DETROIT	895,050	FED. BLDG. NO. 10	40,803,500
SWEETGRASS, MONT.	615,600	COURT OF CLAIMS	6,491,000
ALBUQUERQUE, N. MEX.	469,200	CHICAGO	5,500,000
BISMARCK, N. DAK.	3,283,050	TOTAL	$171,980,000

Here are some of the big federal

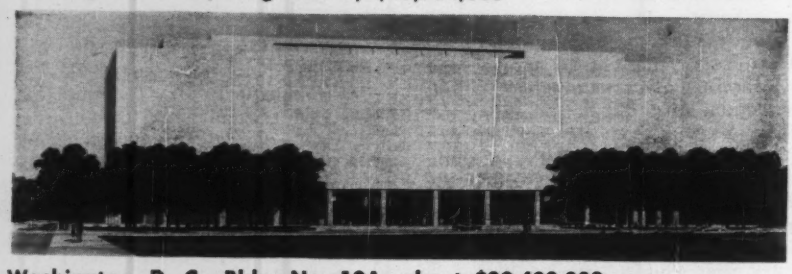
San Francisco, $38,296,900

Hartford, $7,816,400

Miami, $7,076,250



Washington, D. C., Bldg. No. 8, $15,794,000



Washington, D. C., Bldg. No. 10A, about $20,400,000

Controls written into the 1959 law prevent any free-and-easy authorizing or appropriating for new government buildings. The limitations already are having their effect.

In this year's money bill, for example, the House voted $6.4 million to construct a new Court of Claims building in Washington. The Senate Appropriations Committee likewise approved the item and raised the amount to $6.5 million. Now the question is whether the House conferees on the appropriations bill will accept the Senate's higher money figure.

Although House leaders favor the project, a tempest of protest had developed in Washington over the site, which now holds the historical Dolly Madison residence and the old Belasco Theater. Both landmarks would have to be demolished.

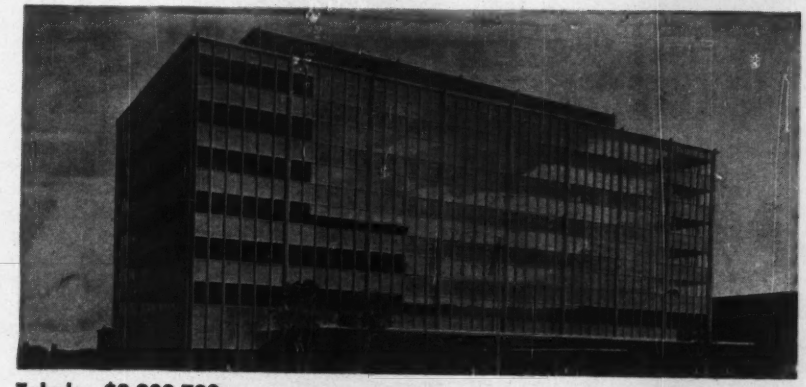
Another limiting feature of the 1959 act will come into play next January when the new Congress meets. Under law, the public works committees cannot approve any additional buildings for authorization when as many as 30 projects remain on the waiting list of authorized projects for which no construction money has been appropriated.

The backlog of authorized buildings will number some 50 projects at the close of the current session. If GSA and the public works committees want to authorize some more next year, they have only two recourses. One would be to defer action until appropriations have been made for a sufficient number of buildings on the authorized list. The other would call for cancellation of some of the outstanding authorizations, thus cutting down the backlog to admit a new high-priority project or two. As a third way out, the public works committees just might find legal justification for granting contingent approvals of new projects, to become effective only when the waiting list was reduced by appropriations that would move authorized projects on the construction.

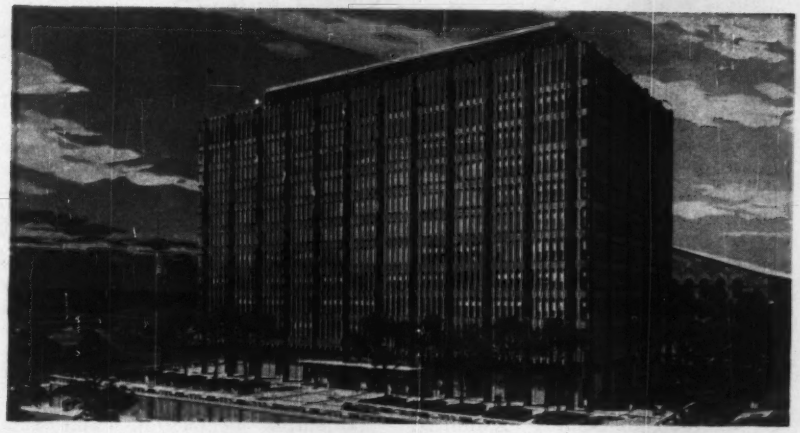
Construction of military buildings by the defense agencies, of special-purpose Post Office Department buildings and of veterans' hospitals is unaffected by the 1959 act. The law coordinates all other building construction for the federal government under GSA and the public works committees of Congress.

Large mail-handling depots of the Post Office Department, as well as thousands of its local post offices, will

contracts to be let in fiscal '61



Toledo, $3,980,700



Memphis, $10,167,150

Washington, D. C., Bldg. No. 9, $21,222,100

Washington, D. C., Bldg. No. 10B, about $20,400,000

continue to be constructed by private investor-builders—to departmental specifications—under the department's long-term lease agreements. These are not lease-purchase contracts. The Post Office retains options for renewing the lease, but it does not obligate itself to take possession of the property.

In the fiscal year ahead, the Post Office plans to increase its leased and rented space in privately owned buildings by more than 9 million sq. ft.

Road Speed-Up

Controls eased to double spending in first quarter

In a surprise move this week, the Administration dangled in front of the states an offer of extra money for the federal aid highway program during the first quarter of fiscal 1961, which begins July 1.

If the states have the projects ready and matching funds available, they may obligate some $1.436 billion in the July-September quarter. So announced Secretary of Commerce Frederick H. Mueller.

That sum is about double what had previously been offered for the first quarter—it's equal to the quarterly control amount scheduled for the first six months. The full year's schedule calls for $2,873,613. Originally it was to have been parcelled out in equal quarterly portions.

Secretary Mueller indicated that reimbursement control would be continued as a policy. This apparent departure from policy is seen as a shot in the arm for the Interstate program. (Since the Interstate program is on a 90-10 matching formula, the states will be more likely to use the extra money on those projects than on ABC roads, where they must match federal funds dollar for dollar.)

The departure may also have been aimed at defeating the chances for an amendment adding $200 million in ABC highway funds to be used as an aid in stimulating economies of depressed areas.

The Senate Public Works Committee last week added the amendment to the $1.85-billion appropriation passed by the House of Representatives for the two-year ABC roadbuilding program.

The funds would be allocated to the states—$100 million in each of the next two years—on a two-to-one matching basis instead of the usual one-for-one ABC split.

It could be significant that the speeded-up Interstate schedule for '61 came as part of an announcement regarding the Commerce Department's intention" to appropriate $2.2 billion of federal aid in fiscal '62. The announcement also included a warning that "the full $2.2 billion might be blocked" by the ABC amendment in Congress.

The announcement said the proposed amendment would also affect the doubling of apportionments for fiscal '61. "The additional drain," of the ABC amendment on the Highway Trust Fund "would make it necessary to reconsider the reimbursable obligation scheduled for 1961," the statement warned.

Educators at ASEE meeting point to . . .

Five Ways to Avoid Engineer Shortage

The quantity and quality of engineering students were the two principal concerns of speakers at the annual meeting of the American Society for Engineering Education, at Purdue University, Lafayette, Ind., last week.

Shortages in both have been feared, but out of the welter of words directed at the audience of nearly a thousand engineering educators, there could be distilled a number of practical suggestions, listed at right. Their implementation could go a long way toward solving the nation's engineering manpower problem, the speakers felt.

1. Provide better guidance in high school.

2. Improve college teaching methods.

3. Accord technical institutes higher status.

4. Broaden graduate study beyond research.

5. Teach sciences, but stress design creativity.

B. R. Teare, Jr., president of ASEE and dean of engineering at Carnegie Institute of Technology, focused on this insufficiency in quantity and quality in his presidential address. He proposed that ASEE establish a special Projects Committee to generate "far reaching ideas," for ASEE study and research, focused on improving the direction and quality of engineering teaching. And he hinted at some of the areas worth exploring by noting that the scientist, the engineer and the technician should be considered together as a technological team; that engineers must be taught to deal with real situations as well as with scientific theory; that graduate study for engineers be broadened to cover more than just research; and that ways be studied to increase the educational productivity of engineering teachers.

The difference between scientists and engineers, which engineering educators must recognize, was also touched on by Theodore von Karman, professor emeritus, California Institute of Technology. "The student engineer must be educated so he will be able to create new designs," he said, "not only ideas and theories." He should be taught the fundamentals of physics and chemistry, but "we must stop the loss of bright young minds to study in strictly scientific areas."

Frederick L. Hovde, president, Purdue University, counseled the engineering educators to interest themselves in the improvement of secondary school curricula. He urged the ASEE to encourage the early selection and guidance of students interested in and capable of pursuing scientific work, and he recommended special college perparatory curricula for high school students intending to study engineering.

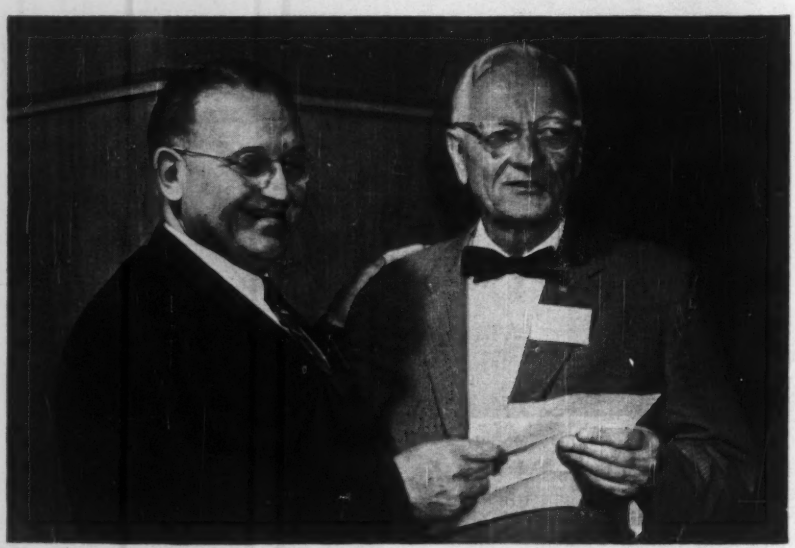
The problem of the quantity and quality of engineers was attacked in other ways by two other speakers. Approaching it at the top end of the scale, Arthur B. Bronwell, president, Worcester Polytechnic Institute, decried "the poverty in the lack of people who are striking out for goals of large ultimate consequence"—those who can be characterized as "adventuresome trailblazers." He urged that students be given opportunities for "creative experiences" in college, and that they be brought into "stimulative personal association with the great minds of our times."

The much publicized engineer shortage, according to G. Ross Henninger, president, Ohio College of Applied Science, is actually "an acute shortage of qualified technicians in engineering and science." Reporting on a three-year study of technical institute education financed by the Ford Foundation for ASEE, Mr. Henninger said it was found that far too many engineers were occupied with engineering technology rather than engineering science. What is needed, he said, is the "courage to turn over to the engineering technician those segments of yesterday's engineering and science which have become today's technologies." And he concluded that "it is up to engineering education in general to help correct the public misconception of the proper status of the technical institute program in higher education."

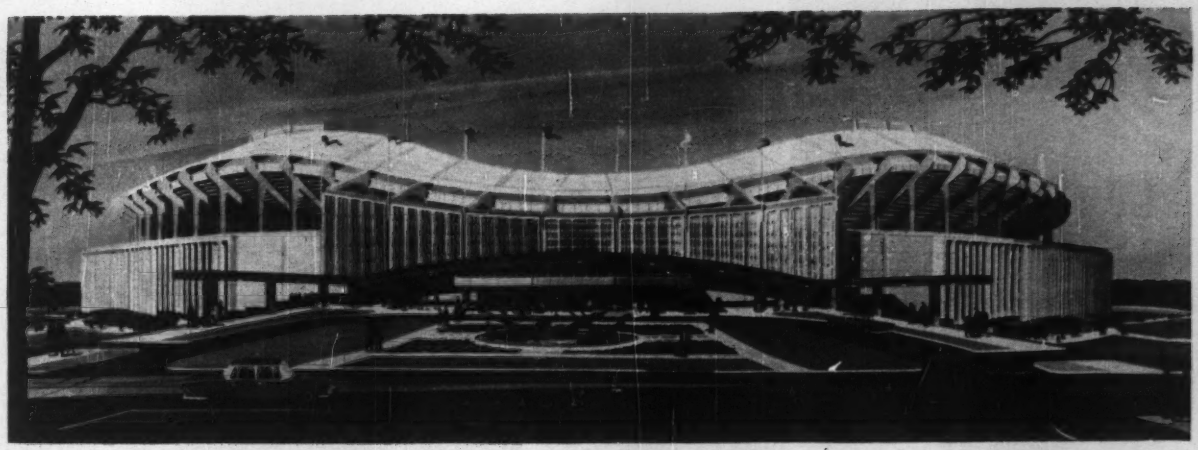
ASEE's president-elect for next year is E. A. Walker, president, Pennsylvania State University.

ASCE awarded its Lamme Medal for distinguished contributions to education and research to Theodore von Karman; its Vincent Bendix Award for outstanding research contributions to Prof. Maurice J. Zucrow; its $1,000 George Westinghouse Award for outstanding teaching ability in a young faculty member to Prof. Robert B. Bird, University of Wisconsin; and its $1,000 Curtis W. McGraw Award for research contributions by a young engineering teacher to Prof. Ali B. Campbell, Northwestern University.

Honorary memberships were conferred on Henry T. Heald, president of the Ford Foundation, and James S. Thompson, former president of the McGraw-Hill Book Co. Previously, only four such memberships had been awarded in ASEE's 67-year history.



HONORARY MEMBERSHIP is awarded to James S. Thompson (right), former president of the McGraw-Hill Book Co., by B. R. Teare, ASEE president.



McCloskey & Co. of Philadelphia is low bidder at $14.2 million.

Award for Washington Stadium Coming

Contract award for construction of a new stadium in Washington, D. C., will follow sale of revenue bonds expected in early July. Present schedule calls for the stadium to be usable for the 1961 football season, fully completed for the baseball opening the following spring.

McCloskey & Co. of Philadelphia came in low last week at $14.2 million. Nine other contractors competed.

The stadium will have column-free grandstands, formed by cantilevering welded box girders off peripheral steel columns, also box-shaped. Lower grandstand framing is cast-in-place reinforced concrete. Precast concrete L-sections, forming treads and risers, will frame both grandstand levels.

A movable temporary section, framed in structural steel and floored with steel plate, will provide 5,000 additional seats during the football season. These seats will be stored under the permanent grandstand when not in use. Another 2,000 seats will go up in the end zones to increase the baseball seating capacity from 43,000 to 50,000.

A narrow balcony-like structure seating 2,000 will hang from the underside of the upper grandstand. It's for the press and other VIP's.

Design is a joint venture of Osborne Co., Cleveland; George Dahl, Dallas architect; and Ewin Engineering Associates of Washington. Osborne's project manager, Noble W. Herzberg, directed architectural and structural design of the superstructure; Dahl consulted on architectural design; and Ewin designed the foundations.

Revenue bonds to be sold by the owner, the District of Columbia Armory Board, are guaranteed by the federal government.

Concrete Loses to Steel on Bridge Job

Steel has won an apparent victory in competitive bidding for the Cabin John Bridge across the Potomac River. The 1,400-ft dual structure (two bridges side by side) will connect the Capitol Beltway in Maryland with its counterpart in Virginia.

The Maryland State Roads Commission offered contractors an opportunity to bid on a series of alternates that could have resulted in either an all-steel superstructure or a combination of steel and prestressed concrete.

Design in steel calls for eight spans. Three 163-ft 4-in. spans on the Maryland side are designed as continuous welded girders; two spans (104 ft and 103 ft) on the Virginia side are designed as simple girders. The three spans of the main river crossing (210-280-210 ft) are of continuous design.

In prestressed concrete, simple approach spans were specified. The main river crossing, however, was to be made up of one continuous box girder anchor span on each side plus a 150-ft suspended steel girder. A third proposal called for prestressed concrete approach spans and welded steel deck girders for the three spans at the center of the bridge.

A joint venture of Ruckman & Hansen, Inc., Fort Wayne, Ind., and Roy Ryan & Son Co., Inc., Evansville, Ind., submitted the apparent low bid—$2,820,385 for steel. Second low bid, also in steel, was by John F. Casey Co., Pittsburgh—$3,296,370.

The third low bidder—Case Construction Corp., Mt. Airy, Md.—was the only one of six to submit bids on the prestressed alternates. The firm's bids were: $3,313,292 for steel; $3,332,496 for prestressed concrete (includes 150-ft suspended steel center span); and $3,362,496 for a combination of steel and prestressed concrete.

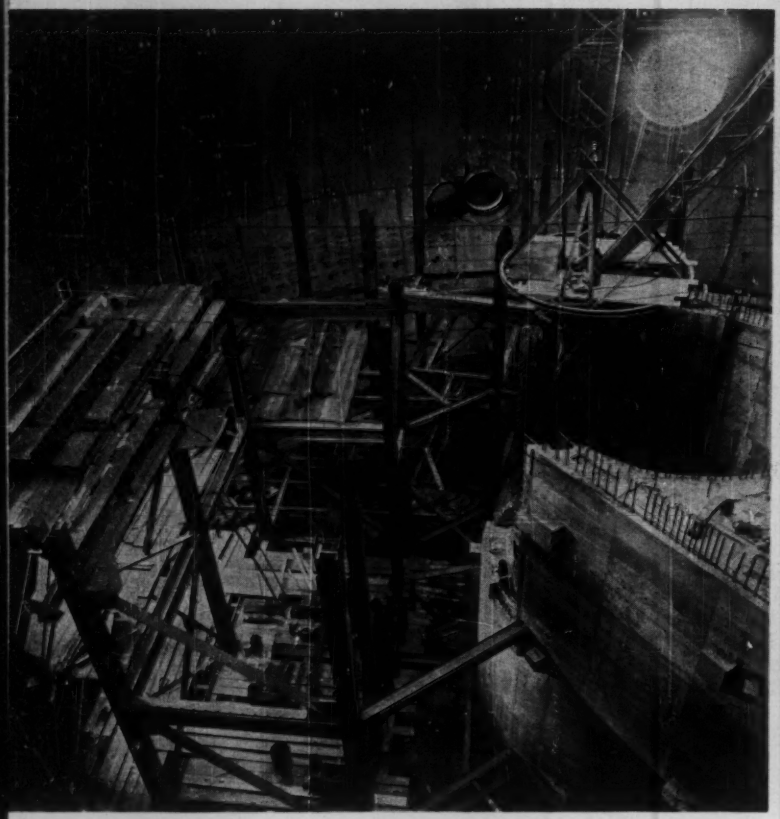
Maryland is responsible for 79% of the cost of the structure, Virginia for 21%.

The low bid was far below reported engineers' estimates (Maryland's 79% share was estimated to be about $3.1 million).

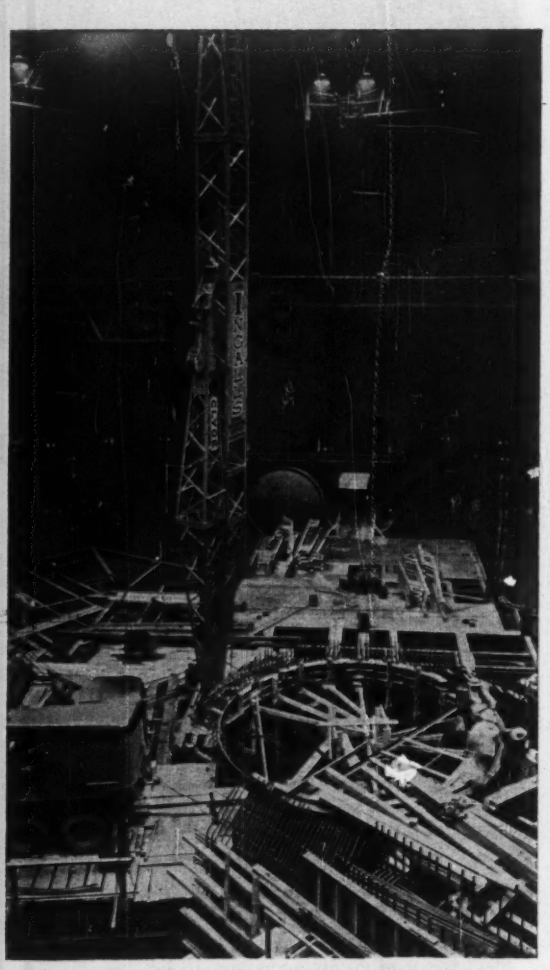
Each of the dual parallel structures has a clear roadway width of 44 ft. All deck girders are of built-up shop welded steel; field connections will be made with high-strength bolts.

Maryland shore spans incorporate four girders with web depth 8 ft 4 in. to 8 ft 6 in. spaced 14 ft c-c. Stringers are located midway between the girders and are 24-in., 76-lb wide flange beams. Floorbeams of the same size are spaced 23 ft 4 in. c-c. Cross frames are located midway between floorbeams and connected by bracing. Cast-in-place concrete deck is 7 in. deep. The deck will have a 2-in. bituminous wearing surface. A similar design is used on the Virginia shore spans.

Web depth of the four continuous girders over the main river crossing varies from 13 ft 6 in. over the piers to about 8 ft 6 in. at one end and 8 ft 4 in. at the other. The cast-in-place deck is designed for composite action.



Work starts in tight circle at bottom of sphere.



Guy derrick handles the first part . . .

Steel Erectors Work Themselves

Workmen are putting the finishing touches on 1,600 tons of framing they've crammed inside the 160-ft-dia steel containment sphere of Con Edison's Indian Point atomic power plant north of New York City (ENR Mar. 17, pp. 40, 43).

Only after the sphere was completely assembled, examined by x-ray for possible flaws and pressure checked could construction work begin inside. First, Walsh Construction Co., New York City, the concrete contractor, cast concentric foundation ledges at the bottom of the sphere plus the first 70 ft of a 108-ft-high concrete pier and container for the 250-ton reactor. Then Ingalls Steel Construction Co., Pittsburgh, started its part of the inside job.

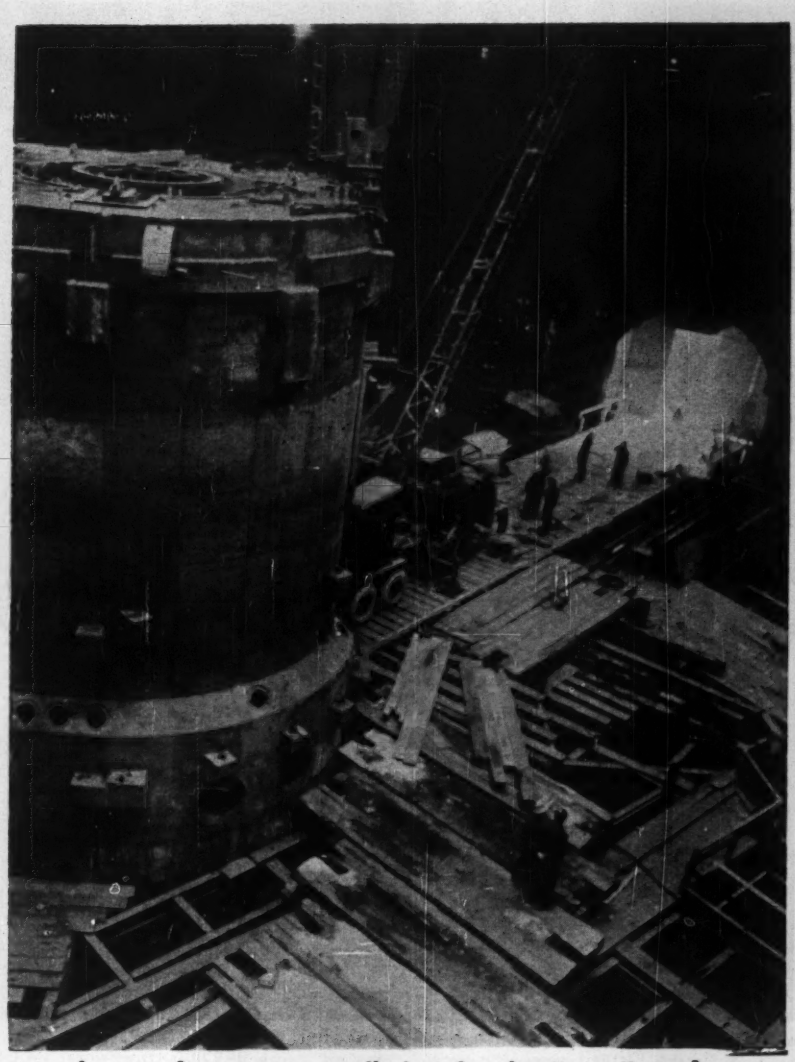
Riggers set a guy derrick on the half finished reactor pier to handle erection up to the 70-ft level, about even with ground level outside. All steel had to come in through a 25-ft dia access hatch. For the first half of the job, workmen rolled steel in on a 1¼-in.-dia trolley line rigged through the hatch into the sphere. With no working platform beneath them, steel workers switched loads from the trolley line to the guy derrick in mid air. All hoisting directions were relayed by phone from inside the sphere to hoist operators outside.

With steel erected to the 70-ft level—even with the access hatch—Ingalls pulled its equipment out while Walsh Construction Co. completed the central pier to the 108-ft level.

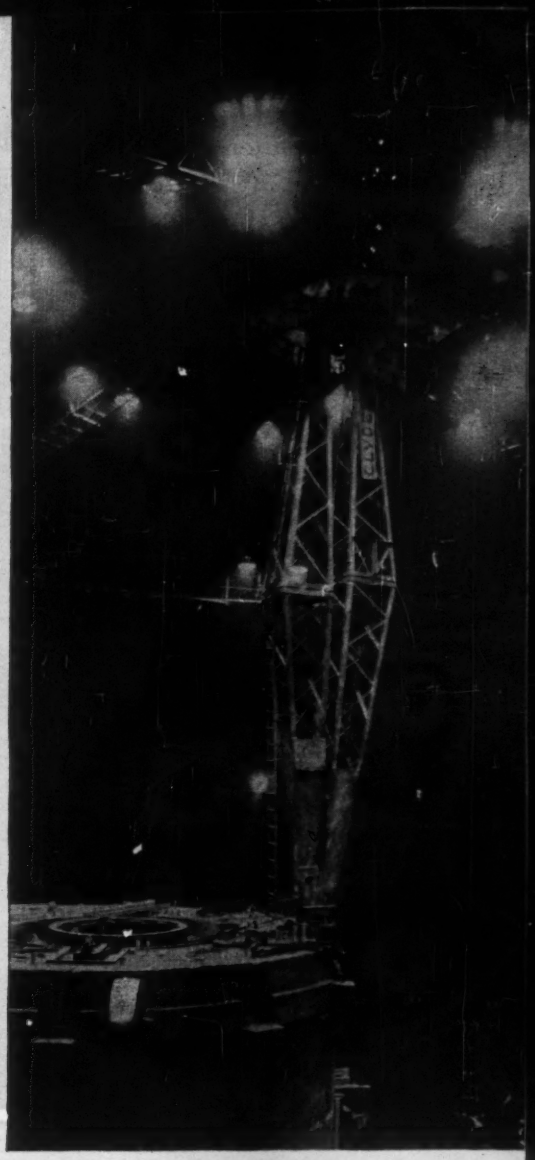
Coming back the second time, Ingalls' guy derrick, designed specifically for the job, just fit—with top and bottom mast sections only—between the pier top and the sphere overhead.

For a while, the going was comparatively easy. Workers planked over the steel at 70 ft and rolled two 20-ton-capacity truck cranes with 40 ft booms right into the sphere. Starting behind the central pier, they backed out around either side, erecting steel as they went. Flatbed trucks rolled through the access hatch delivering steel right to the truck cranes. Then things started to get tight again.

As framing went up into the top half of the sphere, both overhead and swing clearance began to shrink.



. . . then truck cranes are rolled in for the "easy" work.



Stub derrick finishes the job.

Into and Out of a Tight Spot

At the bottom of the sphere, columns are spaced on a 107-ft-dia circle. Near the equator, framing cantilevers out more than 20 ft with nearly 150 ft of work space available. Diagonal columns and braces frame back into the vertical member below.

Up above, the steel tightens up again, but doesn't get any lighter. Some of the heaviest sections are in the top half of the frame, designed to carry the 75-ton capacity polar crane at the top of the sphere.

The steel erectors had to live with two 53-ft-long box girders all through the second half of the job. These make up the polar crane gantry at the 147-ft level above the reactor. But they were too long to get in after the framing was up. So they were hoisted up level by level as the framing progressed.

In all, there are seven levels of steel inside the sphere. Pressure vessels and heavy machinery were built into the framing as it went up. More than half the members are either skewed, sloped or both skewed and sloped. High strength bolts are used for the field connections.

With most of the bolted frame in place, the 250-ton reactor vessel was installed. Ingalls had erected six reinforced 36WF girder sections from the main access hatch to the reactor pier. These served first as their own unloading platform then as a skidway so Gerosa Haulage Corp could move the reactor vessel into position.

Rolling the reactor in on its side, Gerosa's crew raised it off the end girder sections at the central pier with temporary hoists rigged to the steel above.

With the reactor 6 ft overhead, Ingalls' steel workers put in a continuous 24-hour shift moving the end sections of the skidway girders out of the way with chain falls. With the pier cavity clear of temporary steel, Gerosa turned the reactor vessel upright and lowered it into position.

Now Ingalls is closing up the permanent framing between reactor and access hatch, and is being extremely careful to get all its equipment out —while at the same time getting all the permanent machinery in.

ASCE Nominates Holcomb For President in 1960-61

Glenn W. Holcomb, dean of engineering at Oregon State College was nominated for the presidency of the American Society of Civil Engineers at the society's meeting in Reno, Nev., last week.

The society named these four of its members honorary members: Guy F. Atkinson, founder and chairman of the board of the Guy F. Atkinson Co., South San Francisco, Calif.; Solomon C. Hollister, retired dean of engineering at Cornell University; Frank Kerekes, dean of faculty at Michigan College of Mining and Technology; Fred C. Scobey, consulting hydraulic engineer of Berkeley, Calif.

ASCE and the U. S. Committee on Large Dams held a joint meeting. Among the important dams discussed at the four ASCE-USCOLD sessions were: Rocky Reach Dam on the Columbia River, Wash.; Table Rock Dam on the White River, Ark.; Trinity Dam on Trinity River, Calif.; Oroville Dam on Feather River, Calif.; and Tuttle Creek Dam on Big Blue River, Kan.

Oroville-Wyandotte Bonds Are Sold, Contract Is Let

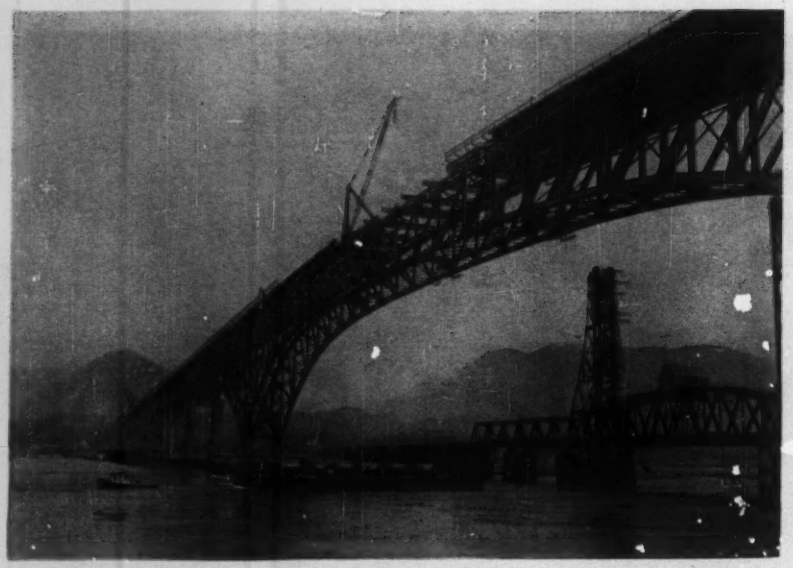
A chain reaction set off by a successful bid on $62 million in bonds finally sent construction crews to work this week on California's long-delayed Oroville-Wyandotte irrigation and hydro project on South Fork of the Feather River.

Work started within hours of the formal award of the $52.6-million contract to a five-company combine headed by Guy F. Atkinson Co., San Francisco, and Ostrander Construction Co., Portland, Ore. The only other bidder, a combine headed by Henry J. Kaiser Co., withdrew its apparent low bid—$51.2 million. Officials objected to reservations in the bid regarding liquidated damages (ENR June 23, p. 43).

Lane Construction Co. Low On Cannonsville Dam

New York City's Board of Water Supply opened bids last week for Cannonsville Dam, prime feature of the third and final stage in the city's Delaware Supply System. Apparent low bidder for the 175-ft-high earthfill dam is Lane Construction Co., Meriden, Conn., at $11,695,110.

Cannonsville, on the West Branch of the Delaware River, will impound 280,000 acre-ft and add about 310,000 mgd to New York City's water supply. Last January, the 44-mile West Delaware Tunnel, which will tie Cannonsville into the system, was holed through (ENR Jan. 14, p. 21).



Delayed two years by an accident . . .

Vancouver Span Nears Completion

The new Second Narrows Bridge at Vancouver, B. C., delayed nearly two years beyond its originally scheduled completion date because of an erection accident, will be opened to traffic next month. The closing steelwork at the center of the main 1,100 ft cantilever span of the high-level structure was placed early this month.

Two years ago an erection bent under the 467-ft north anchor span of the central cantilever collapsed when the webs of the beams in its supporting two-tier grillage buckled. As the partly erected anchor span went down, it pulled an adjacent 285-ft approach span down with it. Fifteen workmen were killed (ENR June 26, 1958, p. 22 and Oct. 9, 1958, p. 24). An investigating board concluded that insufficient grillage diaphragms were used in the support structure.

The new bridge is 4,250 ft long, including 3,160 ft of steel superstructure and 1,080 ft of prestressed concrete girder spans. Its deck will accommodate a 71-ft roadway for six lanes of traffic plus a 4-ft 9-in. sidewalk on either side. The center span provides a shipping clearance of 145 feet.

The $16-million bridge is part of a new expressway linking Vancouver to North Vancouver. Consulting engineers are Swan Wooster Engineering Co., Ltd., Vancouver. Dominion Bridge Co. fabricated and erected the 16,000 tons of steel, using 985,000 shop rivets and 400,000 high-strength field bolts.

Sponsor is the B. C. Toll Highways and Bridges Authority.

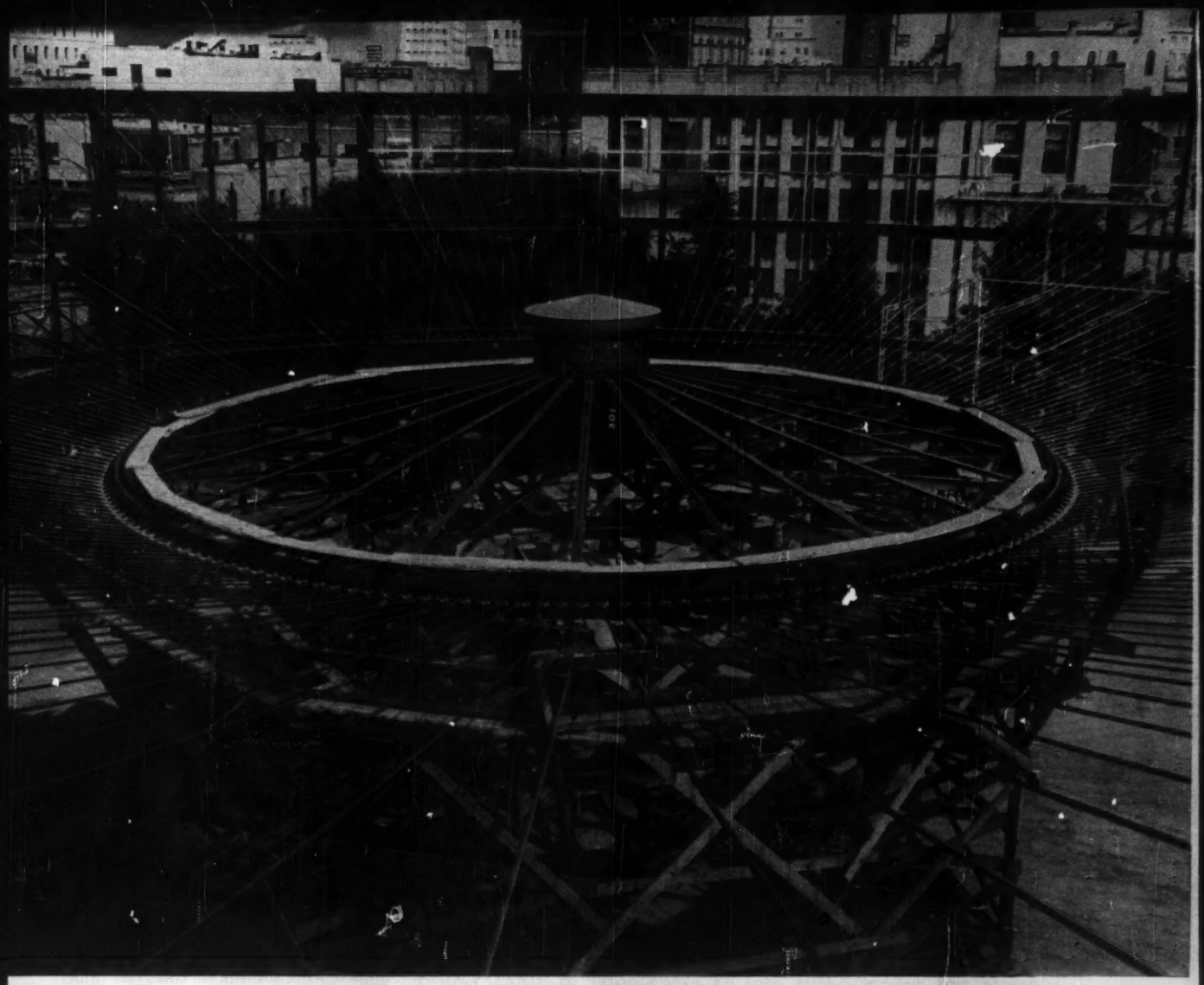
Water Pollution Meeting Set

A steering committee representing about 30 organizations in government, industry engineering, conservation and education met in Washington last week to make plans for a National Conference on Water Pollution. Conceived as a large-scale affair with extensive public participation, the conference will be held in Washington, Dec. 12-14, 1960.

The initiative for the conference came directly from President Eisenhower. In his veto message last February of the bill to amend the Federal Water Pollution Control Act to permit an increase in federal grants from $50 million to $90 million annually, the President specifically requested the Secretary of Health, Education and Welfare to arrange for such a conference.

The purpose of the steering committee meeting last week was to develop a format for the conference. It is understood that these general areas on which discussions should be focused were tentatively agreed upon: The broad aspects of water pollution as a national problem; impact of pollution on the nation's health and economy; relation of pollution to the growing needs for water; remedial measures to keep water clean; and research needs and resources in the water pollution field.

The steering committee will meet again in August to develop the program and select speakers.



General Contractor: G. W. Mitchell; Architects: O'Neil, Ford and Associates, Nicanor Salas, project architect; Structural Engineer: W. E. Simpson Company; Steel Fabricator: Alamo Iron Works

Saucer-shaped roof in San Antonio supported by 200 Bethlehem Strand assemblies

Some Texans call it the Roundhouse . . . others refer to it as the Sombrero. It's the new Villita Assembly Building of the Public Service Board of San Antonio, and it's believed to be the only building of its kind in the United States. The circular structure will help promote San Antonio as a convention site.

The roof is supported by 200 Bethlehem bethanized strand assemblies. The assemblies consist of pre-stretched strands with swaged fittings, and turnbuckles. The pre-stretching limited the residual constructional stretch, and also raised the modulus of elasticity.

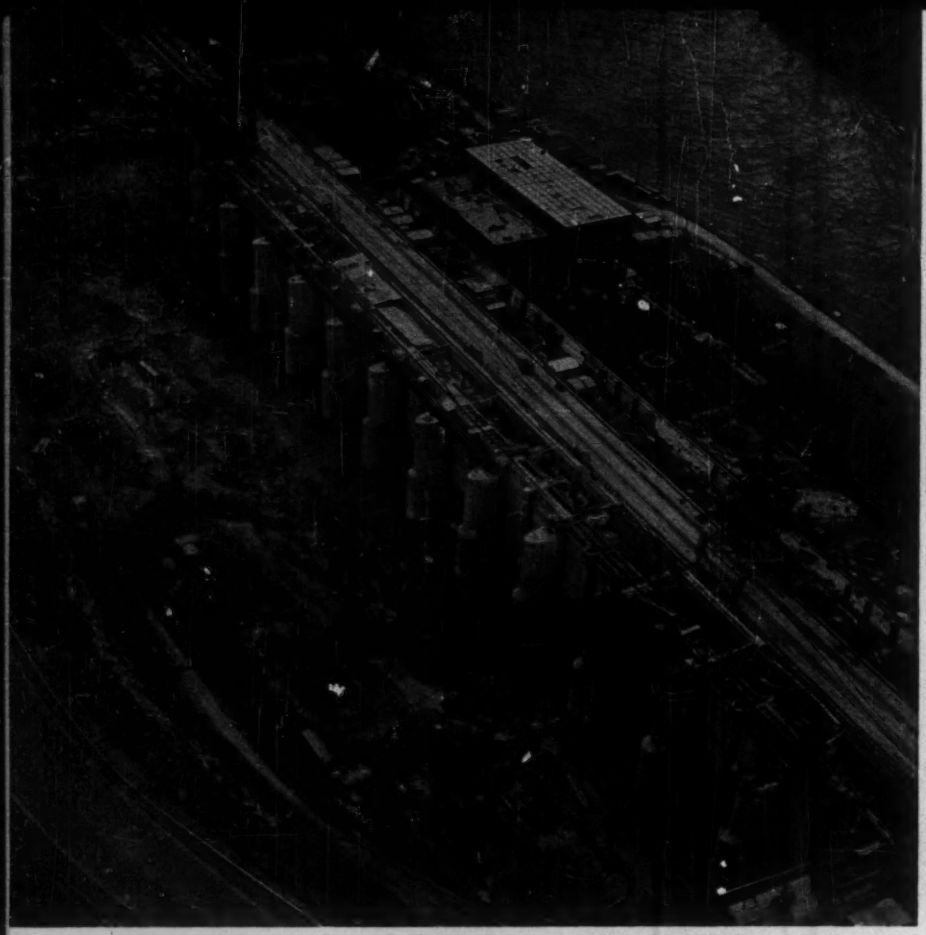
Bethlehem Strand is ideal for suspended-roofs, and other construction, because it provides maximum strength per unit of weight and diameter. Moreover, the bethanized coating of electrolytic zinc comes in three coating weights, for long-lasting protection against corrosion.

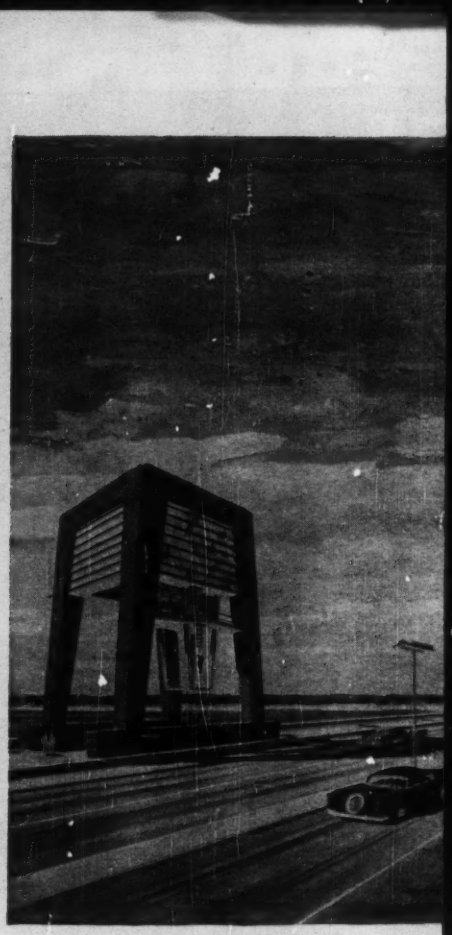
For full details about Bethlehem Strand, get in touch with the nearest Bethlehem sales office, or drop a line to us at Bethlehem, Pa.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

Export Distributor: Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem wire rope





Intakes and upper penstocks are completed first to carry . . . eight lanes of highway and rail

Niagara Power Plant Doubles as

Building a 1,950,000-kw generating plant is no small order under any conditions, but when the intake structure has to double as a bridge for eight lanes of highway and a railroad, it really takes some doing.

At the Niagara Generating Plant, where first power is due on the line next February, just such a job is taking shape—and at breakneck speed, too. By erecting the penstocks top-end-first and going fullblast through last winter, Merritt-Chapman & Scott Corp., general contractor for this phase of the Niagara Power Project, is ahead of schedule and ready for its roadway construction.

The massive intake structure will boast everything short of an emergency landing strip. As part of the over-all power project the Power Authority of the State of New York is building a four-lane parkway that passes over the plant on its intake structure. Between the railway for the 90-ton intake gantry and the parkway, there is just enough room for a 58-ft-wide main artery that links Niagara Falls with the city of Lewiston. And on the upstream side of the gantry a one-track spur of the New York Central Railroad crosses on a plate girder bridge spanning the intake portals.

This road and railroad complex added pressure to the already tight time schedule. It meant that all thirteen intakes had to be complete at the same time, regardless of progress on penstocks or turbine-generator units. The railroad and highway, now detoured upstream on a 1-million-cu-yd rock plug in the giant forebay area, would have to be relocated and the plug excavated before even one turbine wheel could go on the line.

For this reason, the top stages of the penstocks were set and encased in concrete before the lower two-thirds of the 462-ft-long pipes had been brought up the slope to join them.

• **Boot strapping**—To set this upper stage, Chicago Bridge & Iron, penstock fabricators and erectors, used an erection method they call boot strapping. This involves literally hanging the first "can" or penstock ring by two steel straps and then setting succeeding cans on that one until the upper stage is joined with the intake concrete. Since these steel shells cannot be encased in concrete until hydrostatically tested (they hold 2,500 tons of water when under test), the boot straps are something more than baling wire.

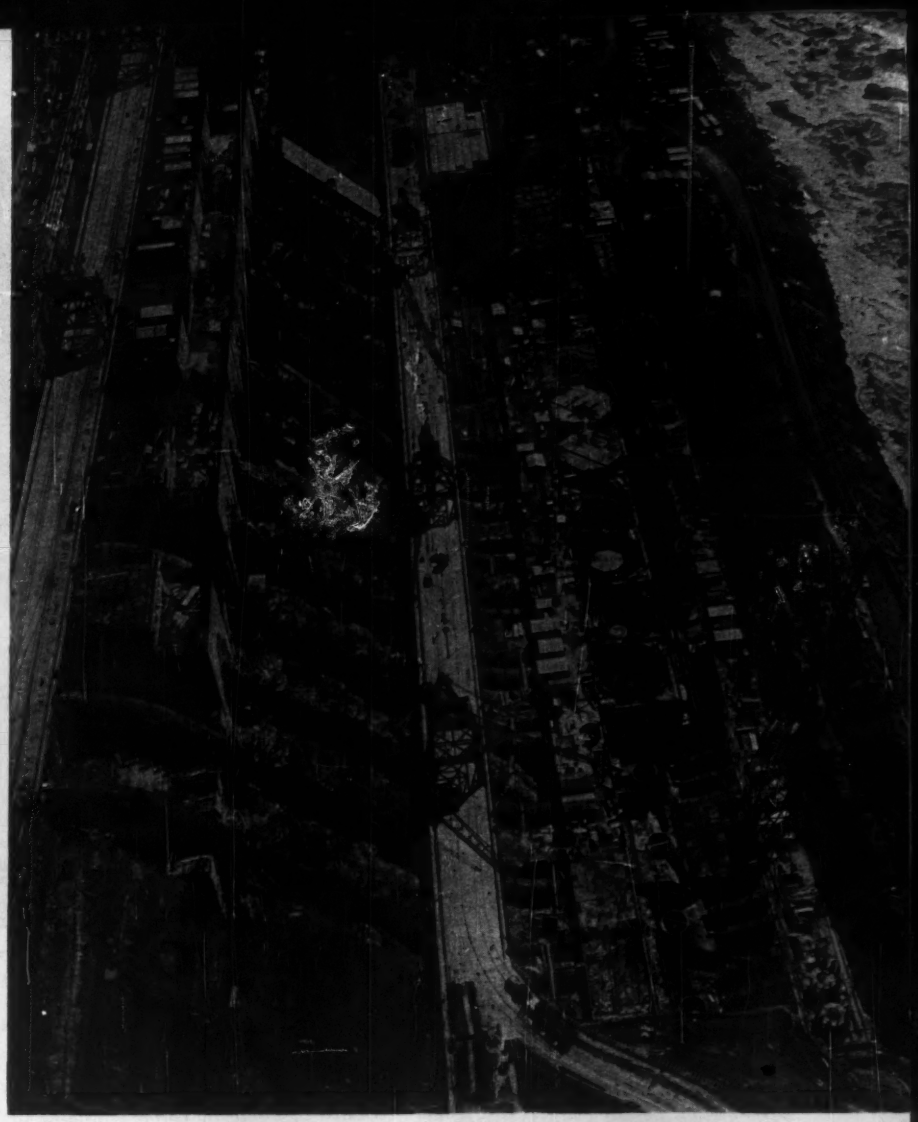
The lower reaches of the pair of straps are 7 in. wide, 1⅞ in. thick, and 80 ft long. These sections are pinned into 4-in.-square bars 48 ft long, that are imbedded in the intake concrete.

To perform the hydrostatic tests, hefty steel domes are welded to the bottom of the hanging penstocks. After pressure testing to 114 psi, the water is left in the tubes for support during concrete encasement.

While the boot strapping job went on some 300 ft above the icy Niagara River, the lower stages of the penstocks got under way. This portion of the giant tubes, immediately ahead of the scrollcase extension was completed, tested, and encased in concrete. It then served as the anchor block for succeeding sections of penstock. The test head installed in the bottom stage was also a giant dome, similar to the cap

spur over the plant.

Bridge



Lower penstock stages rise to join cliff-hanging top stage.

used on the upper stage. But to withstand the ever-increasing head of water developed as the penstock length was increased, this dome was inverted.

• **Ditch car**—Although the project is alive with whirly cranes—seven at last count—CB&I did some improvising on the erection of a section of each penstock that ran under the lower construction trestle.

Since the two whirlys riding this trestle couldn't set "cans" directly under themselves, rails were set in the stair-like rough slab, cast in the rock notches. A squat little dolly, similar to a boat launching cradle, railroaded cans into position under the trestle. Four hydraulic jacks built into the hoist-powered "ditch car" elevated the cans so that legs attached to some did not strike anchor bolts imbedded in the slab.

When in position the can was jacked down, seated and the ditch car winched back up the slope to receive another section.

The final step in erecting each penstock consisted of one can, the closure ring, which in the case of this unusual installation was about three-quarters of the way up the slope.

The finished penstocks will be completely encased in concrete, as will the rock between them. In fact, the weathering characteristics of the shale exposed in the lower reaches of the job proved so poor that even where it will be covered with concrete, a 1-in. layer of gunite has been applied. Any rock left exposed to the elements will be protected with 4 in. of gunite over wire mesh.

• **Relocation**—Although the intake deck is up to final roadway level over all but two intakes, the buttress works on either end of the plant are not yet up to grade. The buttresses will conform to the shape of the intake structure and support the two-level Niagara Parkway.

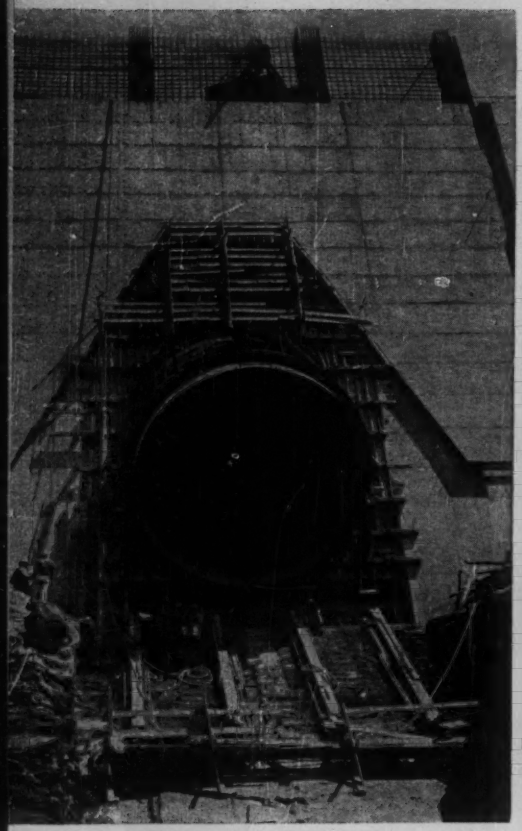
A $675,000 trestle of Bailey bridging is nearly completed across the forebay as a temporary route for Lewiston Road, the other main road that will eventually cross on the intake. The railroad piers, an integral part of the intakes, are complete, and the plate girders are almost all in place.

As soon as Lewiston Road is detoured over the Bailey span, excavation of the million-cubic-yard plug in the 970-ft-wide forebay will begin. Next the railroad will be permanently routed over the intake and the plug completely removed.

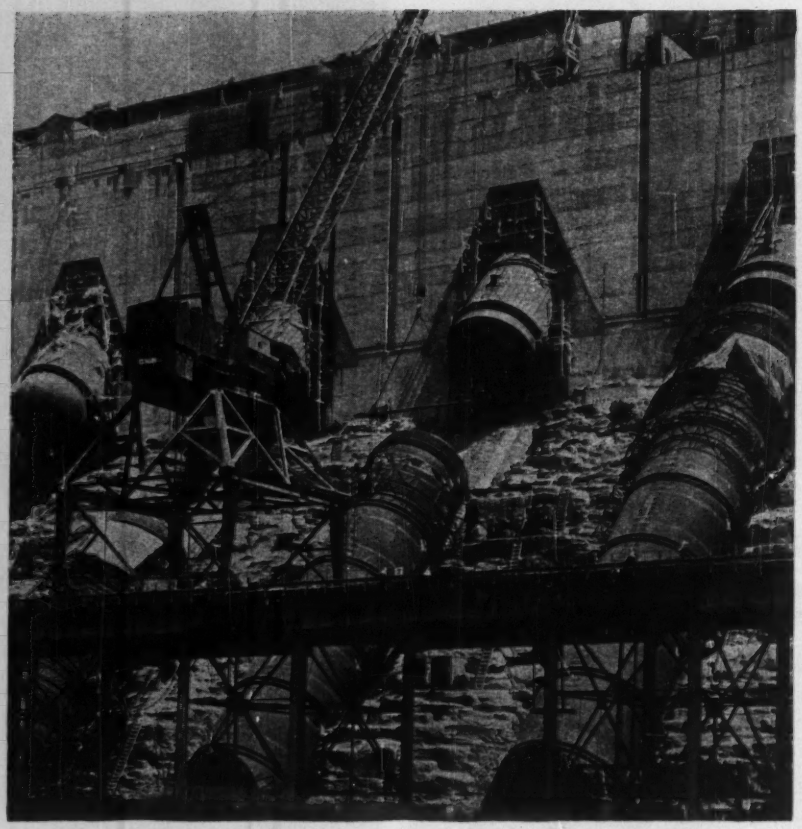
Over 500 precast, prestressed concrete beams are being cast on the job site for the highway support structure on the intakes and buttresses.

The south abutment will be made up of a multitude of reinforced concrete cells to produce the effect of a solid block nearly 300 ft high. Eventually, under separate contract, a visitor's overlook building will be built atop the abutment.

• **Powerhouse**—The generator and transformer structures at river's edge now



GAPING PENSTOCK dwarfs workers lunching in its shadow.



STAGE 4 PENSTOCK RING is set by whirly as welders wait to tack it home. Test dome is on penstock at left, while tube at right is awaiting closure ring.

resemble a Paul Bunyan staircase with one or two steps out of place. Looking south from Unit 13, progress ranges from encasement of draft tube liners to foundation soleplates for the generators at Unit 1.

Each 17-ft-dia Francis turbine will spin a 150,000-kw generator.

The generator deck of the outdoor-type plant will be serviced by two gantry cranes. One, a behemoth with a 630-ton capacity, will straddle the generator hatches and deliver turbine generator components to and from the erection bay located on the river side of the control building on the south end of the generator deck. A small 30-ton gantry will raise and lower draft tube gates.

The familiar bird-cages will be missing from Niagara's transformer structure. All power and control cables will be built into the structure in tunnels. This labyrinthian series of eight tunnels runs the whole length of the plant and up the slope just south of the No. 1 penstock.

From here the tunnels run completely underground to the main Niagara switchyard (located on the south shore of the 500-ft-wide power canal that connects the Lewiston plant with the two waterway conduits and the Tuscarora pumped storage plant about a mile away (ENR March 10, p. 30).

• **Winter progress**—A work force of nearly 2,500 men, labored around the clock six-days a week last winter in a successful effort to bring the job up to schedule. Last September, M-C&S was approximately 68,000 cu yd behind on concrete placement, but by placing an average 63,000 cu yd per month between October and May, the contractor came from behind despite the cold weather. As of June 18 concreting was 45,000 cu yd ahead of schedule.

An upper and lower batch plant supplies concrete to the dinky trains that ride the trestles. An elaborate conveyor system feeds the batch plants from an aggregate stockyard to the north of the intake structure. Bottom dumps using a superhighway-type access road haul from one of the biggest aggregate plants ever built for a construction job (ENR Sept. 17, 1959 p. 64) to keep the big job-site stockyard supplied.

Uhl, Hall & Rich, engineers for the entire Niagara Power Project, boast that you can ride from the waterways intake above the falls to the Lewiston Generating plant without once crossing a city street.

Bridges and underpasses now part of the haul roads will be incorporated into the Niagara Expressway, a circumferential highway that will skirt the city of Niagara Falls and connect the Grand Island Bridge with the proposed International Bridge, downriver from the Lewiston plant.

Measured from foundation bottom to intake deck, the Niagara Generating Plant towers 389 ft high and will use an average head of 305 ft, topping the head at the scenic falls by nearly 150 ft. This is accomplished by diverting the Niagara River waters above the American Rapids thereby taking advantage of the raging 50 ft slide the stream takes before going over the brink. The rest is gained by having the main generating plant downstream of the last rapids below the falls.

The Niagara Power project is under the direction of the Power Authority of the State of New York. William H. Latham is resident engineer for PASNY. Uhl, Hall & Rich, engineers for the Niagara Power Project, have J. P. Ottesen as project engineer, and J. P. O'Donnell as construction manager for the Lewiston plant. Robert I. Senn is project engineer for Merritt-Chapman & Scott, general contractors on the main generating plant.

ALPHA news and notes from the field

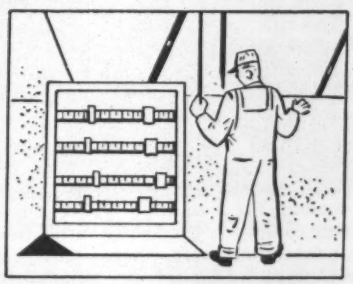
BETTER CONSTRUCTION THROUGH BETTER USE OF CEMENTS

More Rules of Thumb for Concrete Mixes

This is the second set of rules of thumb offered by Alpha to guide you in making changes in concrete mixes. Note that these methods are recommended for approximations only. Depend on engineering assistance whenever available.

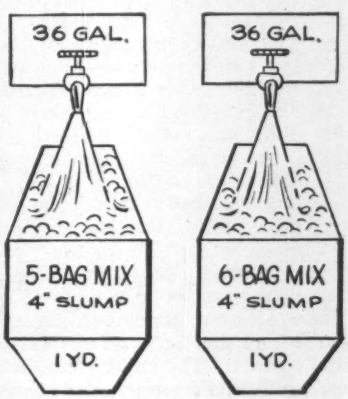
1. Changes in Cement Content

For each sack increase in cement content, subtract 80 lbs. of aggregate. For each sack decrease in cement content, *add* 80 lbs. of aggregate.



2. Maintaining Same Slump of Non Air-Entraining Mixes

Changing the cement content of non air-entraining mixes—and maintaining the same slump—requires no appreciable change in *total* water per yard. Bear in mind that total water includes free moisture in aggregates.



3. Sticky Concrete

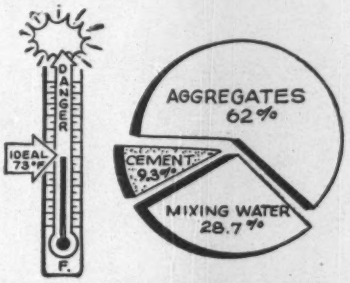
Sticky concrete is usually due to too much sand or too much air. To reduce stickiness:

a. reduce amount of air-entraining agent, but check with air meter to assure sufficient air content.

b. reduce sand 50 lbs. and increase coarse aggregate 50 lbs. If stickiness remains, repeat.

4. Reducing Mix Temperature

The effects of the temperatures of concrete ingredients on the mix are indicated by the approximate percentages shown below.



1. Sprinkle hot-aggregate stock piles with water or use fog sprays to cool the aggregate.
2. Apply fog sprays to operating conveyor belts and to coarse aggregates in bin storage.
3. Use crushed ice in the mix, replacing water pound for pound.
4. Avoid stock-piling aggregates directly in the sun if possible. Shade coarse-aggregate bin storage.
5. Protect or insulate mix-water storage tanks and water lines from direct rays of the sun.
6. Avoid the use of strength accelerators in hot weather.

One or a combination of the above suggestions should enable reduction of concrete temperature to a safe level.

5. Changing From Regular to Air-Entraining Mix

To maintain the same strength when changing from a regular cement mix to an air-entraining mix, reduce the water ¼ gallon per sack of cement and sand 10 lbs. per sack of cement *for each 1% of entrained air*. The adjusted mix will have a higher cement content.

6. Adjusting Lightweight Mix

If a lightweight mix is designed for dry aggregate, and damp aggregate is used, a quick adjustment in the mix is necessary. This can be made without changing the mix design too much, as follows: Subtract the weight of the added water from the total water. (This is assumed to be the absorbed water.) Divide and add this weight equally to the fine and coarse lightweight aggregates. If concrete sand is used in the mixture, it should be remembered that the adjustment should be made in the lightweight aggregate proportions, *not* in the sand.

Reprints of this advertisement are available on request.

ALPHA
PORTLAND CEMENT COMPANY
Alpha Building, Easton, Pa.

Glulam parts, at ease and in formation, form a warehouse.

Tall

By making the most of its product, a lumber company has constructed a warehouse that serves as an ad for wood, complete with enticing cost figures.

The all-wood structure has a capacity of four million board-feet of rough lumber and supports 53 tons of rail crane spanning across its 104-ft wide interior. The cost: only $5.65 per sq ft—a pretty low figure considering the framing design provision for a gantry crane. Including the 10-ton capacity crane, trolley, bridge, rails and motors, the cost still is only $9.84 per sq ft.

Part of a million dollar expansion program of the Crossett Lumber Co., Crossett, Ark., the warehouse will provide the company with 48,200 sq ft of floor space.

To get the room necessary for efficient handling of rough lumber, bowstring roof trusses were specified to sit 55 ft off the finished floor. Roof height at crown of the trusses is 70 ft. The designers needed this height inside to allow for the gantry crane. Crane rails are 42 ft off the floor with the crane riding above.

Framing for the warehouse and for the 53-ton weight of the gantry crane is a double row of massive, glued laminated wood columns, each 56 ft high. There are 21 columns on each side of the warehouse, spaced about 23 ft c-c along the building's 486-ft length. Each column is a constant 9 in. thick but tapers out from 30 in. at the base to a maximum 48 in. at a seat for the crane rails. Interior face of each column is vertical. An upset batter on the exterior face accounts for the increased width at the top.

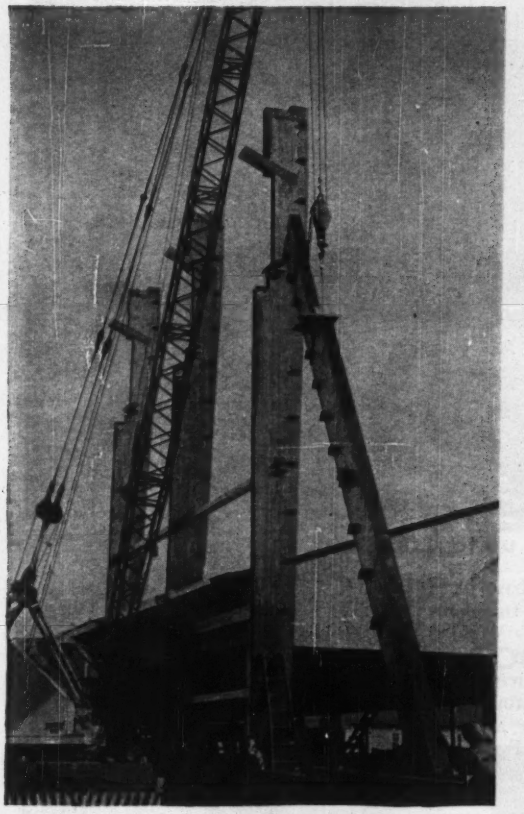
Each column weighed about 4,000 lb when laminated. But after pressure treatment with pentachlorophenol preservative in an oil carrier, they tipped the scale at over 5,000 lb.

Roof framing consists of bow-string trusses that span the 104-ft width of the building. They have laminated upper and lower chords and solid timber webs. Pin connections join these trusses to the column tops. Trusses are also knee-braced to the columns to resist wind loads. At the bottom, columns are set on individual spread footings carried down to stiff red clay.

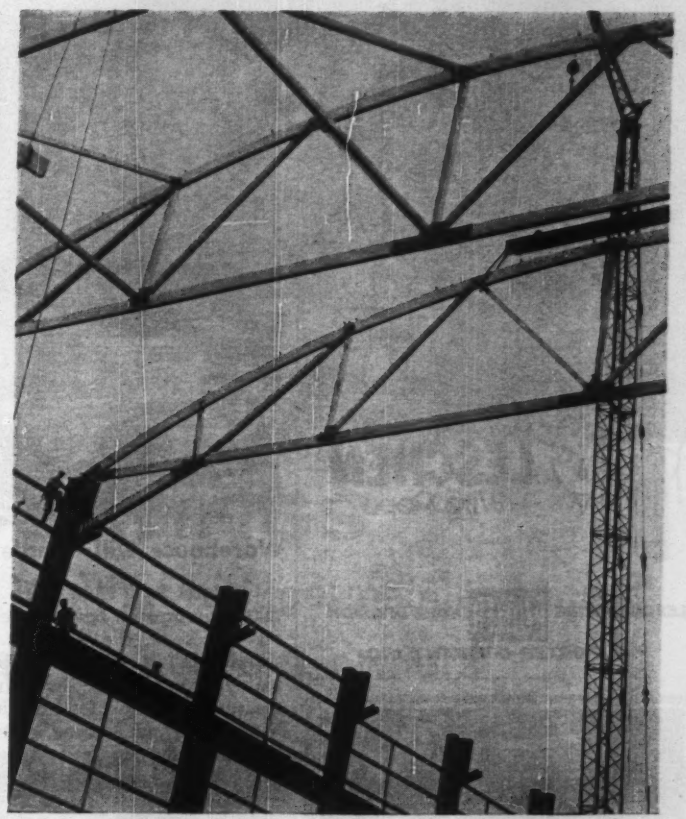
Construction crews didn't use guy wires during column erection. Instead, heavy moment connections from columns to footings were bolted up as each column was set in place.

These moment connections extend seven feet up the inner and outer faces of the columns. The entire connection is really a shoe. Face plates, $\frac{3}{4}$ in. thick,

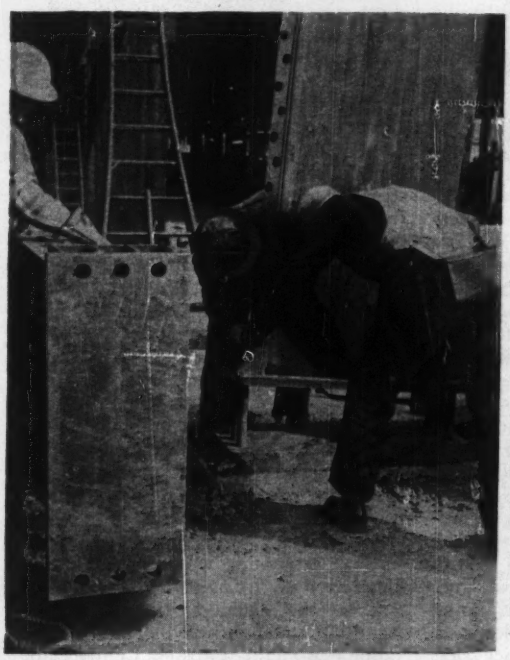
Timber Design at a Short Price



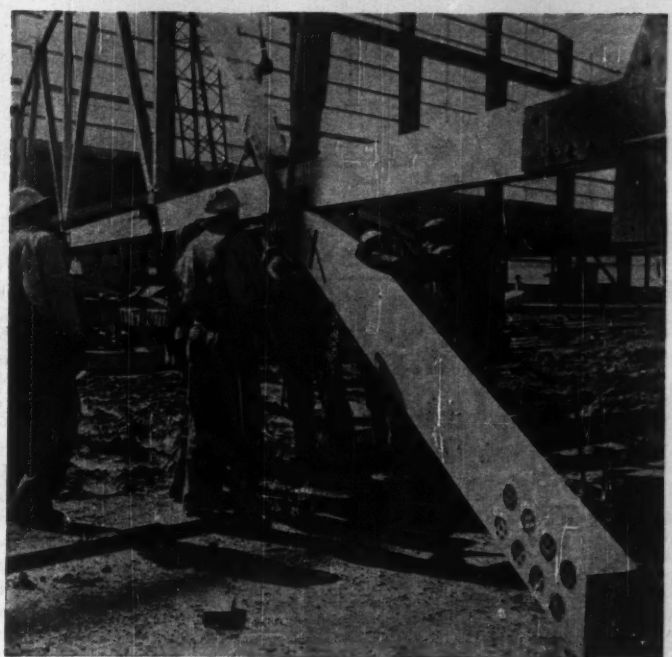
Tapered columns, 56 ft high . . .



will carry 53 tons of rail crane plus the roof.



Moment connections at bottom . . .



and wind bracing at top make a substantial design.

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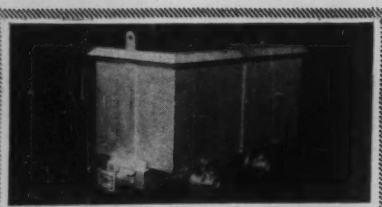

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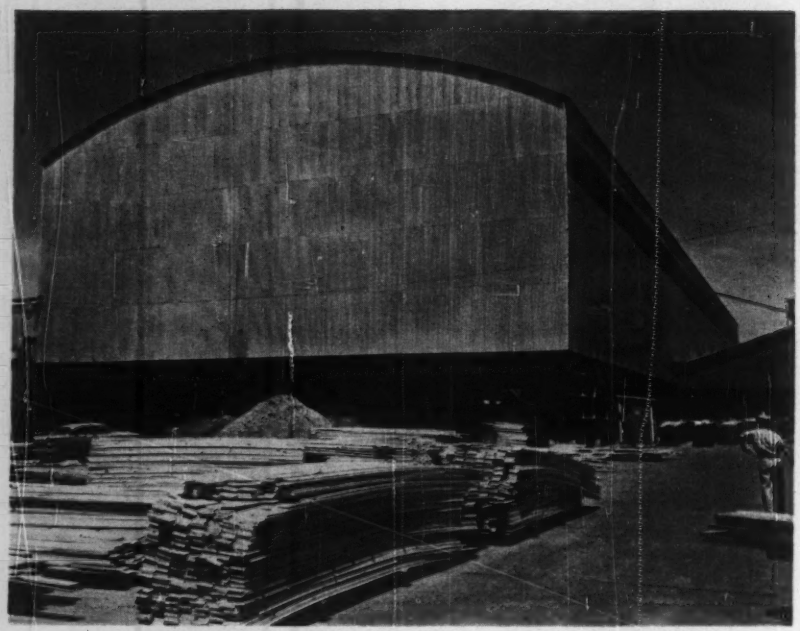

Warehouse will handle up to 4,000 mbf at a time.

are welded to a 1¼-in.-thick base plate that extends 4 in. beyond the front and rear faces of the columns. Welded stiffener fillets with a drilled bearing plate on top fill these steps; three 1¼-in.-dia. anchor bolts extend up through the base plate and bearing plate at both the front and rear faces. Retaining nuts, when tightened on the bearing plates, stand 5¼ in. off the base plate.

The entire moment connection is attached to the column with twenty ¾-in.-dia bolts spaced 4 in. c-c vertically and staggered 1½ in. horizontally off column center. These bolts, extending from front to back of each column, run through 4-in.-dia shear plates counter sunk into the column faces.

Despite the heavy moment connections, workmen laced each column to its neighbor with permanent horizontal struts (8x12-in. timbers) as they erected the warehouse frame. Girts (3x12-in. timbers bolted flat) and crane rail beams came next. Girts are fastened to the columns by clip angles and bolts. The lowest girt is an inverted tee supporting the upper girts at midspan by 2x6-in. compression struts.

While column erection was going on, carpenters assembled the roof trusses at the other end of the site.

A single truck crane with 90 ft of boom and jib hoisted roof trusses into place with a steel beam picking frame. Straps from the beam ends were pinned to the first upper chord panel points left and right of the center truss strut.

Pin connections between columns and trusses are single unit weldments made up with ½- and ⅜-in.-thick side plates and a ½-in.-thick bearing plate located between the column top and truss end. Seats and clip angles welded to the connection take roof girts, eave beams and permanent steel x-bracing.

As roof trusses went up, crews braced them with solid timber struts followed by the roof deck joists. Joists are three 2x12-in. members nailed together and spaced 8 ft c-c with clip angles on top of the roof trusses. Roof decking is all 2x6-in. material. Wall siding is 29 gage corrugated, galvanized sheet steel. All wood in the warehouse is Southern Yellow Pine, grades varying according to loading.

Design loads are 20 psf on horizontal projection and 25 psf on vertical surfaces. Codes used in the design are the "National Design Specifications for Stress Grade Lumber," "Timber Construction Standards" of the American Institute of Timber Construction, American Institute of Steel Construction Specifications and "Structural Glued, Laminated Southern Pine Specifications" of the Southern Pine Association. American Society of Civil Engineers recommendations were used for suction and internal pressures on the curved roof surfaces since the bottom 9 to 15 ft of the building is left open.

Unit Structures, Inc., Peshtigo, Wis., holds the contract for design, fabrication and construction of the warehouse frame. H. E. Bovay Houston, is consulting structural engineer. G. R. Schmelzer & Associates, Little Rock, Ark., is the structural timber erector. Rannie Terral, Farmerville, La., is the siding contractor. Crossett Lumber Co. crews erected the wood roof decking.

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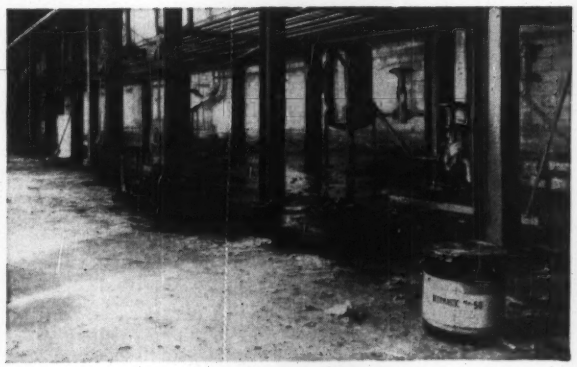

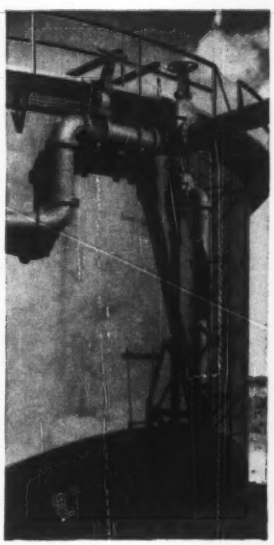

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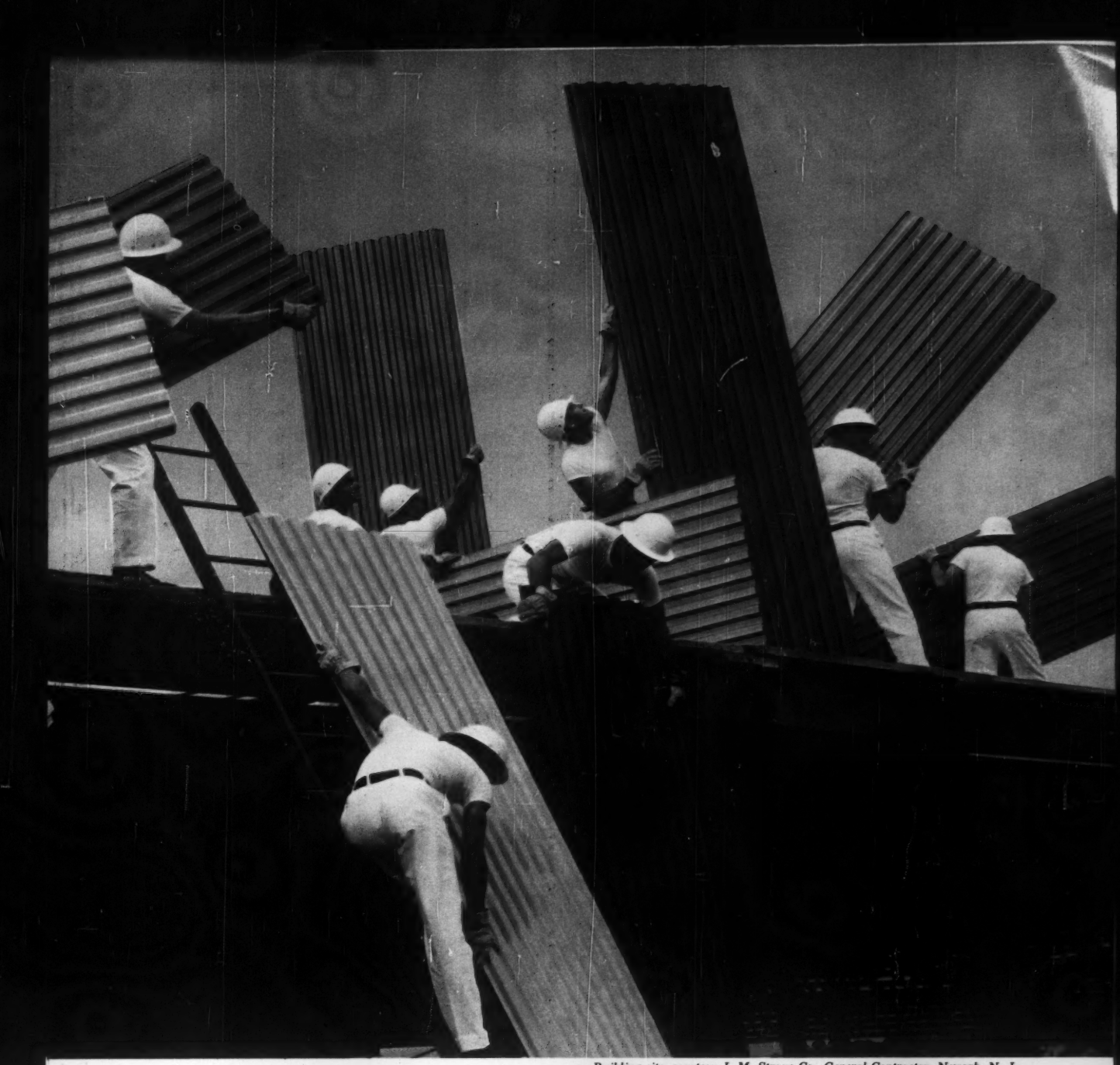

Building site, courtesy J. M. Straus Co., General Contractor, Newark, N. J.

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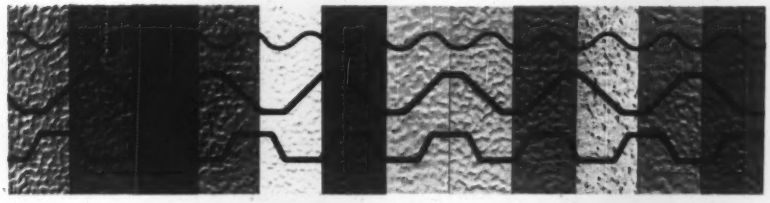

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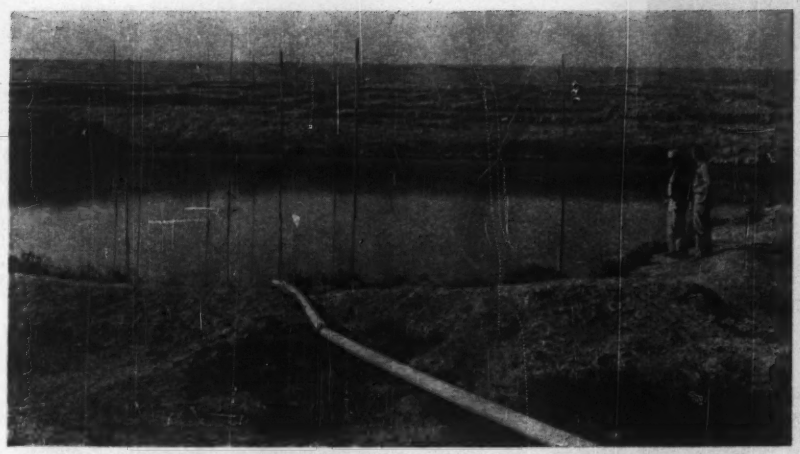
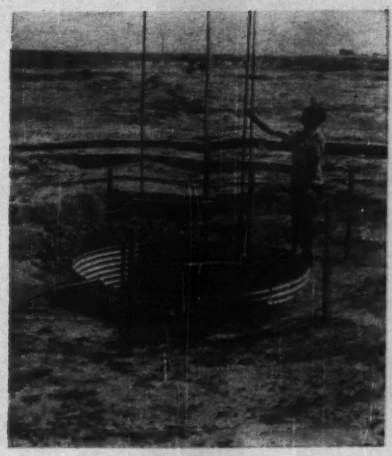




These soils settle when soaked, endangering irrigation structures, so California is . . .

Pre-Settling Canal R-O-W by Flooding

Preconsolidation of soils under irrigation canals by flooding the right-of-way before construction will be tested in California. The program is part of the design work being carried out by the California Department of Water Resources leading to construction of the San Joaquin Valley-Southern California Aqueduct System.

The flooding program is aimed at counteracting effects of shallow subsidence, which has seriously threatened effectiveness of some irrigation systems constructed in recent years in California's San Joaquin Valley.

Although first noted some 50 years ago, the effect of shallow subsidence has been intensified in recent years by development of new irrigation systems. Some soils that had never before been irrigated settled as much as 10 ft when subjected to intensive irrigation. And, as the settlement has tended to be irregular, the gradient of irrigation canals has been upset and capacity impaired. This phenomenon occurred not only on distribution systems but also along main canals where occasional leaks or spills resulted in a haphazard pattern of settlement.

After recent effects of the shallow subsidence phenomenon were noted, an intensive cooperative research program was undertaken by a number of agencies, including the U. S. Geological Survey, the U. S. Bureau of Reclamation, the California Department of Water Resources.

Test plots were installed to develop data on the subsidence. It was found that areas subjected to such shallow subsidence appear to be located almost wholly near the arid western and southern margins of the San Joaquin Valley where the average annual rainfall is insufficient to penetrate below the root zone. The phenomenon has occurred only above the natural water table and has resulted from a volume decrease accompanied by a density increase of the soil. And it has occurred only on certain soils.

Preconsolidation by flooding appears to hold the most promise of effectively combating shallow subsidence. In canal construction work, wide right-of-way acquisition could be a means of limiting the effects of settlement resulting from nearby irrigation. Even so, preconsolidation of the canal area would still be important. And, of course, development of more impervious canal linings will contribute to control of subsidence.

The flooding test program will be started in the 1960-61 fiscal year provided the budget for the Department of Water Resources includes $4 million requested for the project.

The flooding will test a section of the San Joaquin Valley-Southern California Aqueduct route that is part of the joint-use facilities of the integrated federal San Luis and state Feather River projects.

"Actually, we will be causing subsidence to occur before we build the adqueduct rather than having it occur afterwards when extensive damage could result" says Harvey O. Banks, State Director of Water Resources. "If we don't preconsolidate the land, normal seepage from the aqueduct or adjacent irrigation would cause serious problems. The structure might then dip and buckle, rendering it less effective in transporting project water."

The state proposes to pump water from the U. S. Bureau of Reclamation's Delta-Mendota Canal at a point eight miles south of Los Banos. The water would be pumped about 200 ft vertically to a feeder canal constructed for the purpose on the west or uphill side of the proposed permanent aqueduct, and conveyed by gravity flow southerly to the points where preconsolidation is necessary.

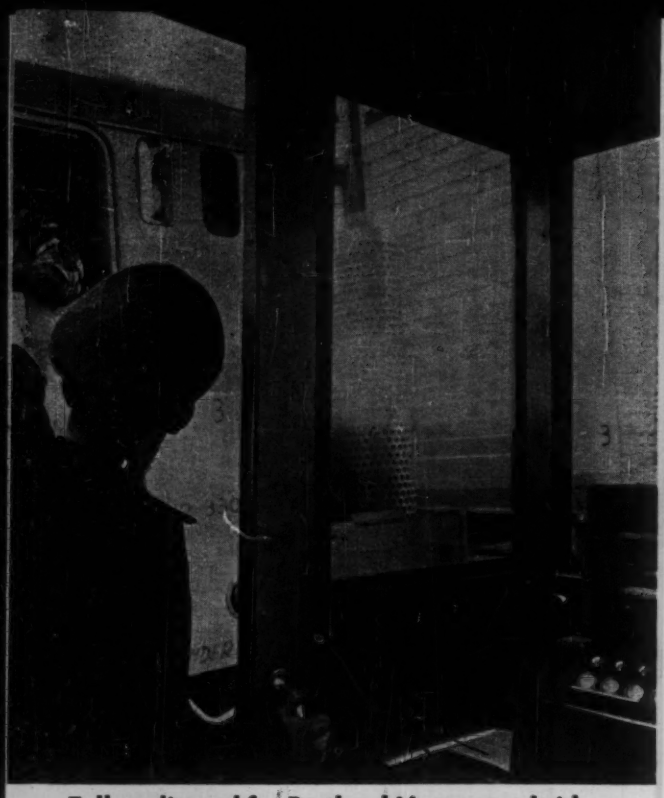
Surplus water will be obtained from the Delta-Mendota Canal during periods when irrigation demands are below the canal's capacity generally from September to June.

Along the proposed aqueduct route south of San Luis Reservoir, it is estimated there are some 40 miles of canal route which will require this treatment. The 1960-1961 budget seeks funds for the first 26 miles of the feeder canal to bring water into the subsidence areas in western Fresno County.

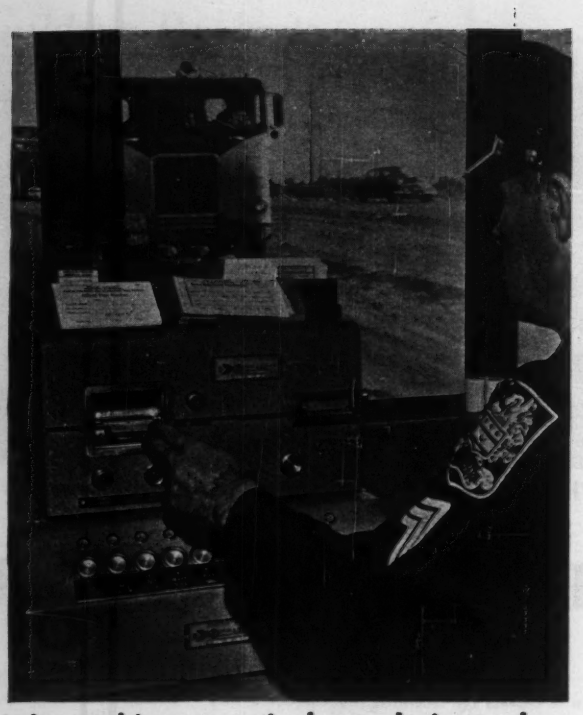
After preconsolidation is completed along the first portion of the permanent aqueduct route, the feeder canal will be extended south to treat the remainder of the alignment subject to subsidence. Later, the feeder canal will be incorporated as part of the main aqueduct system by using it as a collection ditch for cross drainage waters.

Another and more widespread type of subsidence that has caused concern in the San Joaquin Valley results from pumping of groundwater from deep aquifers for irrigation purposes. The study group has considered this too.

It appears that with proper geologic and hydrologic data, predictions of this deep subsidence appear possible. And there are definite indications that development of imported water supplies which reduce or stop deep pumping will arrest and may stop deep subsidence.



Toll credit card for Portland-Vancouver bridge . . .



is inserted in automatic charge device, and . . .

To Pay Interstate Bridge Tolls:

Credit cards for trucks and buses are proving successful in the automatic toll collection system installed on the Oregon approach to the twin bridges across the Columbia River, between Portland, Ore., and Vancouver, Wash.

One of the bridges is a new structure, built with the proceeds of the sale in 1956 of $9.3 million in bonds by the Washington Toll Bridge Authority. The same agency issued $5.2 million in bonds in 1958 to finance reconstruction of an existing bridge.

The toll collection system, in addition to handling chargeplate customers, furnishes receipts on request and documents transactions on both printed record and punched tape.

There are 14 lanes in the toll plaza, eight of which are automatic "exact change" lanes. Here, a toss of the correct amount of coins or special tokens into the hopper automatically gives the driver the green light to proceed.

The other lanes are manned. Anything from a motorcycle to a trailer truck is classified and keyed for the appropriate toll on classification button box equipment. Working in conjunction with the classification equipment are receipt printers and automatic charge system devices.

Each lane is equipped with an individual coin box, whose number is recorded. Money that goes into each collection hopper is accumulated on a master chart. Each box also shows a treadle count and totalizing count for that lane. This information is for audit purposes.

As a vehicle approaches one of the attended lanes, the collector classifies it by type and toll by pushing the appropriate button on the classification box in the booth.

When the vehicle comes to a stop at the booth, the collector processes it, makes change, provides information, and gives the driver a receipt if one is requested.

To give a receipt, the collector presses a button on the receipt printer. The receipt is not delivered until the correct amount of money is deposited in the automatic toll collection equipment.

Then a green light flashes on the receipt printer and the lane traffic light turns green, signaling the driver to proceed across the bridge.

Because the classification key box has a built-in "memory," the collector can usually work one vehicle ahead. That is, he can classify the next approaching vehicle, even though the vehicle just processed may not yet have cleared the treadle.

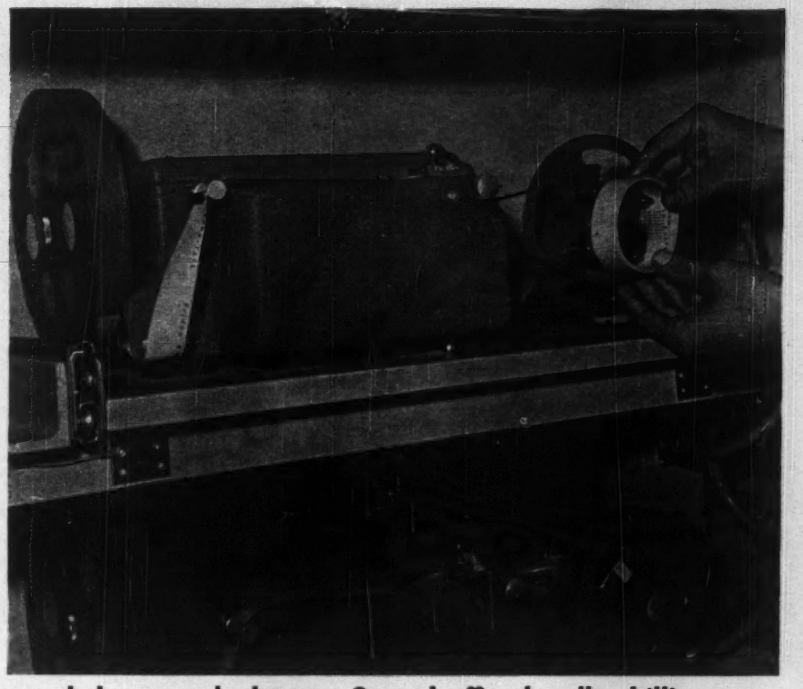
However, system interlocks prevent the following vehicle from being classified until after the first vehicle has paid, or charged, the proper toll for that classification.

Various interlocks and system double-checks prevent errors in the calculations and guard against fraud.

Vehicle classification for charge accounts is handled the same way as for cash customers. Instead of dropping the proper amount of coins or tokens into the hopper, however, the driver hands the toll collector his plastic charge plate. The charge machine automatically transmits the customer's account number and relays the vehicle classification to a punch tape recorder. Total charge and vehicle classification are simultaneously transmitted to the printed recorder. When the charge plate is withdrawn, the light turns green and the vehicle proceeds.

The amount of money corresponding to the vehicle classification is accumulated in a "total charge" column in the printing recorder, which can be used at the toll site or in a remote location. The system is a form of double-entry bookkeeping; it checks on itself. Various safeguards and checks are provided against errors.

The tape punches are standard Friden models modified to make them suitable for continuous, rather than eight-hours, operation. The chad disposal mechanism has also been modified to prevent jamming.



recorded on punched tape. Central office handles billing.

One More Credit Card

The remote charge recorder is actually a dual unit. One tape punch is in operation, the other on standby. With three successive machine errors, the equipment will switch over from one tape punch unit to the other.

The tapes are programmed to fit standard IBM 046 and 047 tape-to-card converters, or the corresponding Remington-Rand data conversion equipment. In this case, accounting is handled by IBM equipment in the Olympia headquarters of the Washington State Toll Bridge Authority. Firms issued credit cards after normal credit investigations are billed monthly for tolls charged against them.

More than 550 firms are using the credit billing procedure; and collection experience has been good. Only one small operator has had his credit cut off so far.

Established toll schedules for bond amortization call for a 20-cent fee for passenger cars, 40 cents for trucks, and 60 cents for trucks and trailers. Only vehicles exceeding 6,000-lb gross weight are eligible for credit cards. Toll discounts allowed range from 10% for 20 to 39 trips per month to 50% for 2,500 or more trips per month.

Since the twin bridges have been in operation less than one year, it is difficult to compare traffic and revenue figures with those predicted. Average traffic of 40,000 vehicles per day had been predicted for the first year or two of operation; in late spring, traffic averaged 32,000 to 35,000 vpd, and summer travel is expected to boost this to 50,000 vpd.

The crossing is an interesting example of interagency cooperation, since Oregon maintains the structures. And, Washington's toll plaza is in Oregon.

The toll authority maintains a $50,000 operating fund for working capital, covering both maintenance and administration; the balance of toll receipts are pro-rated between the two bond issues. Estimated payout period for the bonds is from seven to eight years. Bonds mature in 1971, making maximum payout period 11 years from initiation of tolls.

The old bridge was maintained by the two states on a 50-50 basis. When bonds are paid off, operation will revert to that system. Since Washington already had a toll bridge authority, it was simplest for that agency to handle financing and collections when the two state highway departments agreed on the need for twin bridges. A similar approach to construction of other proposed Columbia River bridges is in the talking stage.

Collection machinery was designed by the Taller Cooper Division of American Electronics, Inc.

Tollroad Safety Up

Accident death rate in '60 drops to half of '59 rate

U.S. tollroads established new safety records during the first quarter of 1960. The fatality rate on 18 of the nation's major tollroads dropped to an unprecedented average of 1.5 per 100 million miles of travel during that period, reports the American Bridge, Tunnel and Turnpike Association.

This almost halves the low fatality rate of 2.8 per 100 million miles of travel established by tollroads during all of 1959, and it is less than one-third of the 1959 rate for all other roads. (The national average for all other roads was 5.4 in 1959, 5.6 in 1958 and 5.9 in 1957.)

The first quarter reports do not reflect heavy vacation travel. But, except in the deep South, driving conditions during January, February and March are the most hazardous of the year.

The New Hampshire Turnpike, with 31.8 million miles of travel, recorded no deaths and only seven accidents involving personal injuries. The Maine Turnpike, with 29 million miles of travel was also free from fatalities and chalked up only six accidents with personal injuries. Also death free were the Sunshine State Parkway (Fla.) with 60.0 million miles of travel and the Richmond-Petersburg Turnpike, with 33.3 million miles.

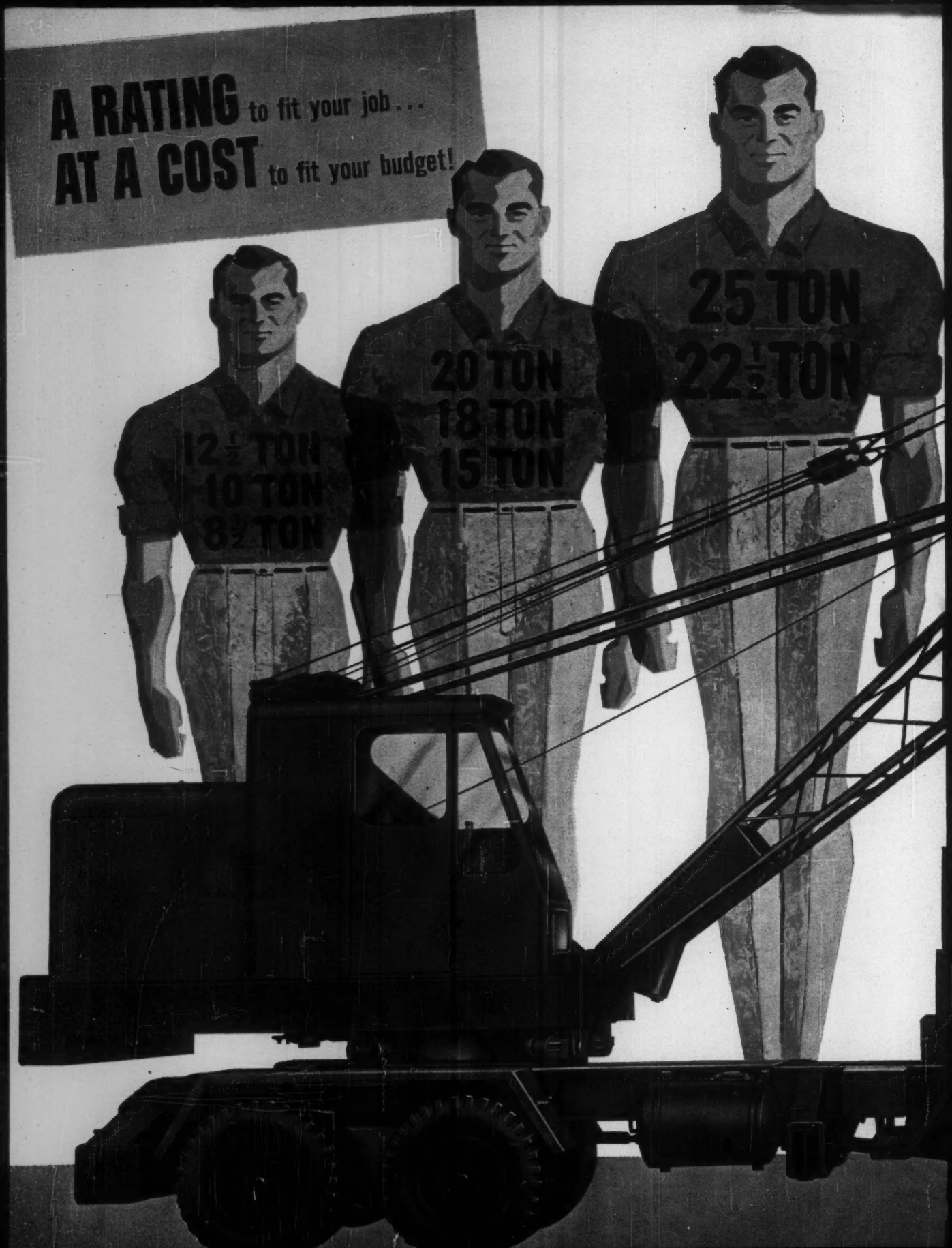
Best of the heavily traveled roads was the Garden State Parkway in New Jersey. It recorded one death in 263.7 million miles for a rate of 0.4.

Poorest of the reporting tollroads was the West Virginia Turnpike, with a rate of 10.5. The Kentucky Turnpike was a distant second with 5.1. The overall fatality rate on other roads in both states is considerably higher than the national average. Last year West Virgina had a rate of 8.8 while Kentucky stood at 7.5

Edge-Striping Becoming Common on State Roads

State highways now carry more than 55,000 miles of reflective safety edge striping and the total may pass 70,000 miles this year, according to a survey reported by the Cataphote Corp.

State highway engineers attribute two principal advantages to edge striping: reduction in accidents, and reduced costs of shoulder maintenance. The lines along the edges of the pavement are credited with adding to assurance of drivers, enabling them to feel safer keeping closer to the edge and increasing clearance between passing vehicles.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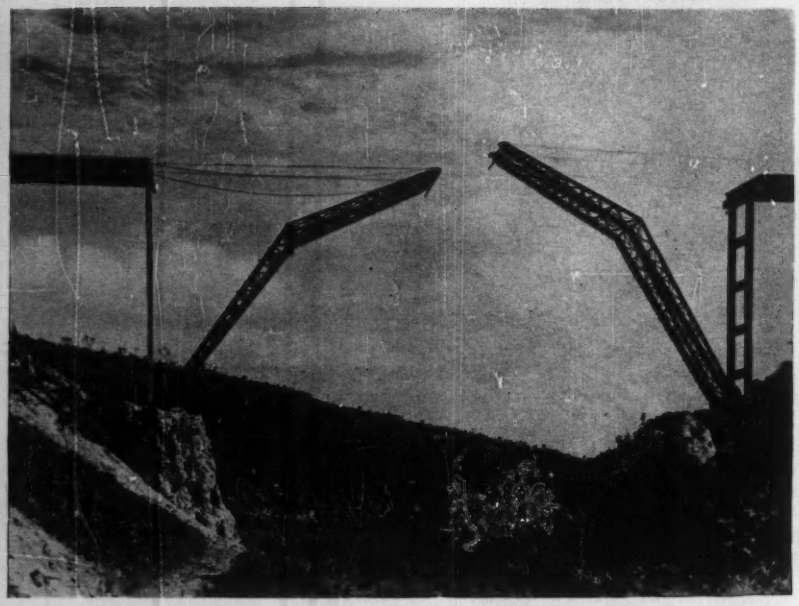
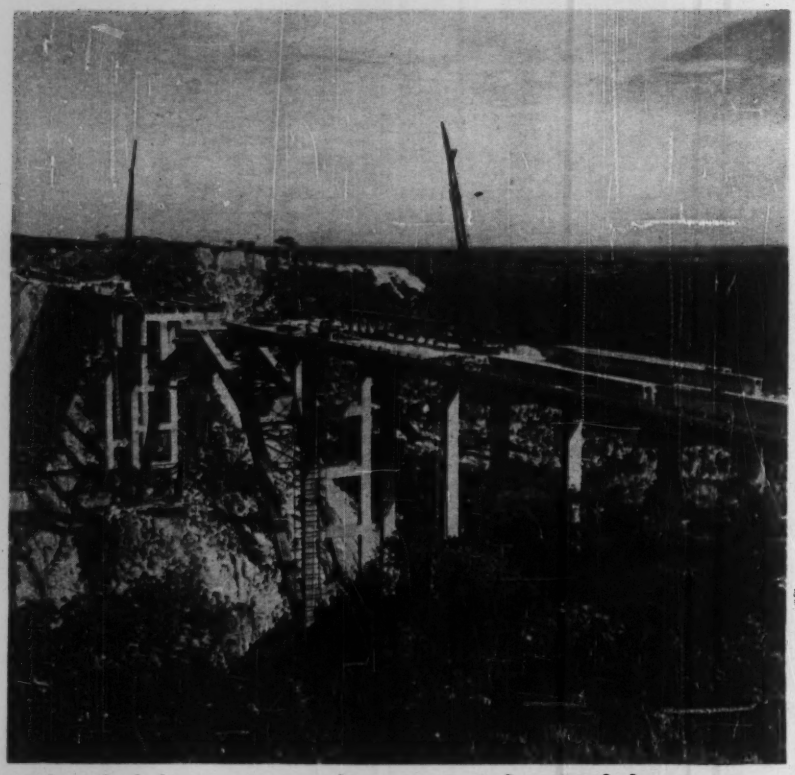


carry timbers for concrete forms and swing together . . .

Across a Rugged Cuban Ravine:



Bridge deck has prestressed concrete girders 93 ft long.

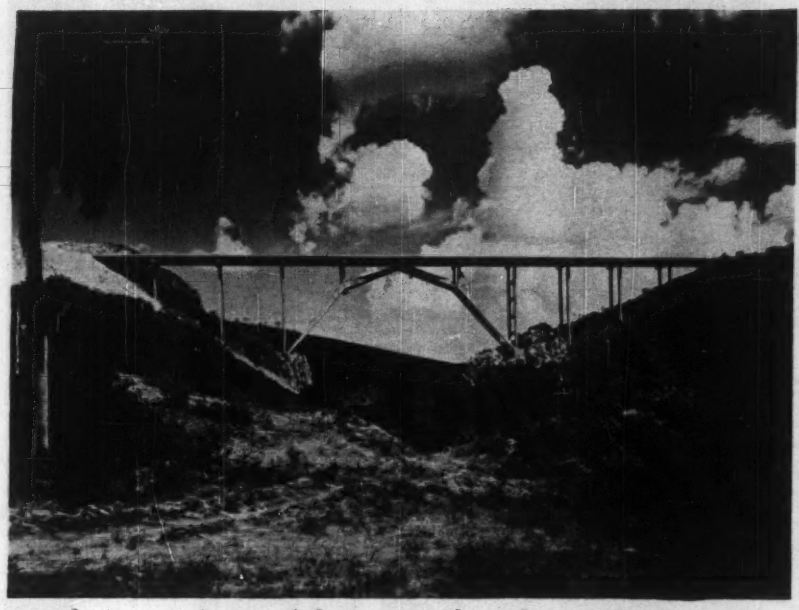
Contractor Ingeneria del Golfo, S. A. has completed construction of a spectacular bridge across Bacunayagua Ravine on the rugged northern coast of Cuba. Designed by Saenz-Cancio-Martin-Gutierrez, Havana engineer-architects, the structure includes a rigid polygonal concrete-and-steel arch with a clear span of 376 ft.

The 1,029-ft bridge is a link in the Via Blanca, a scenic route between Havana and Varadero Beach, an international tourist center. Location and design requirements of the highway established the height of the bridge deck 338 ft above the bottom of the ravine.

On either side of the arch, slender concrete piers support the roadway. Piers immediately adjacent to the arch have a slenderness ratio of 42:1; they rest on the massive concrete arch abutments.

Workmen fabricated the steel framework for each side of the arch and connected each section to the abutments. Each half of the arch carried timber members on which concrete forms were hung. The steel frameworks were handled by lines and jacks set up at a casting site on the bridge approaches.

The contractor cast the concrete for the arch in place, prestressing the arch as this was done.



to arch over ravine on Cuba's rugged northern coast.

A Three-Hinged Arch

Sixty-six precast, prestressed concrete girders, 93.5 ft long, are incorporated in the bridge deck. Each span has six girders, spaced 9 ft 1 in. c-c. Cast in beds set up on the approaches, each beam weighs 47 tons. They were handled by a 50-ton truck crane.

The bridge deck is 52 ft 6 in. wide, with four traffic lanes and a sidewalk on each side. Portions of the deck between the girders were cast in place, using forms hung from the girders. Roadway surface is asphaltic concrete, 2 in. thick.

Labrador Hydro Project Set for the Unknown River

Labrador is to get its first hydroelectric power plant within two years. It will be situated at Twin Falls on the Unknown River, a tributary of the Hamilton River.

The plant will have an initial capacity of 89,500 kw. This power will be sold to Iron Ore Co. of Canada, Ltd., and Wabush Iron Co., Ltd. on long-term contracts at fixed annual rates.

The topography at Twin Falls is well suited for water-power production. In a three-mile stretch of river, there are two sets of falls, each set in turn being made up of twin falls. Total drop in this distance is 400 ft.

Running roughly parallel with the river is a dry gorge whose bed at its upper end is about 300 ft below the river level above the falls. Plan of development is to divert the river from the plateau level through a canal and penstocks to a powerhouse in this gorge.

The catchment area of 8,400 square miles will provide an estimated minimum flow of 3,450 cfs without regulation. At the net head of 290 ft, this can produce 89,500 hp firm at 80% load factor. For the initial installations, therefore, the plant will be run-of-the-river.

As demand increases, up to 12 ft of storage can be provided in two large lakes from which the Unknown River flows. Regulated flow in a dry year will then be 8,100 cfs—sufficient for 225,000 kw firm at 80% load factor.

Around the World . . .

• **Aggressive construction**—Communist China is building a highway deep into the Ladakh section of Kashmir. It's part of Peiping's plan to strengthen its position in its dispute with India over 15,000 sq mi of territory in Kashmier's northeastern sector. New Delhi isn't expected to do anything about it, because the area is almost inaccessible from India and construction goes on behind well guarded positions.

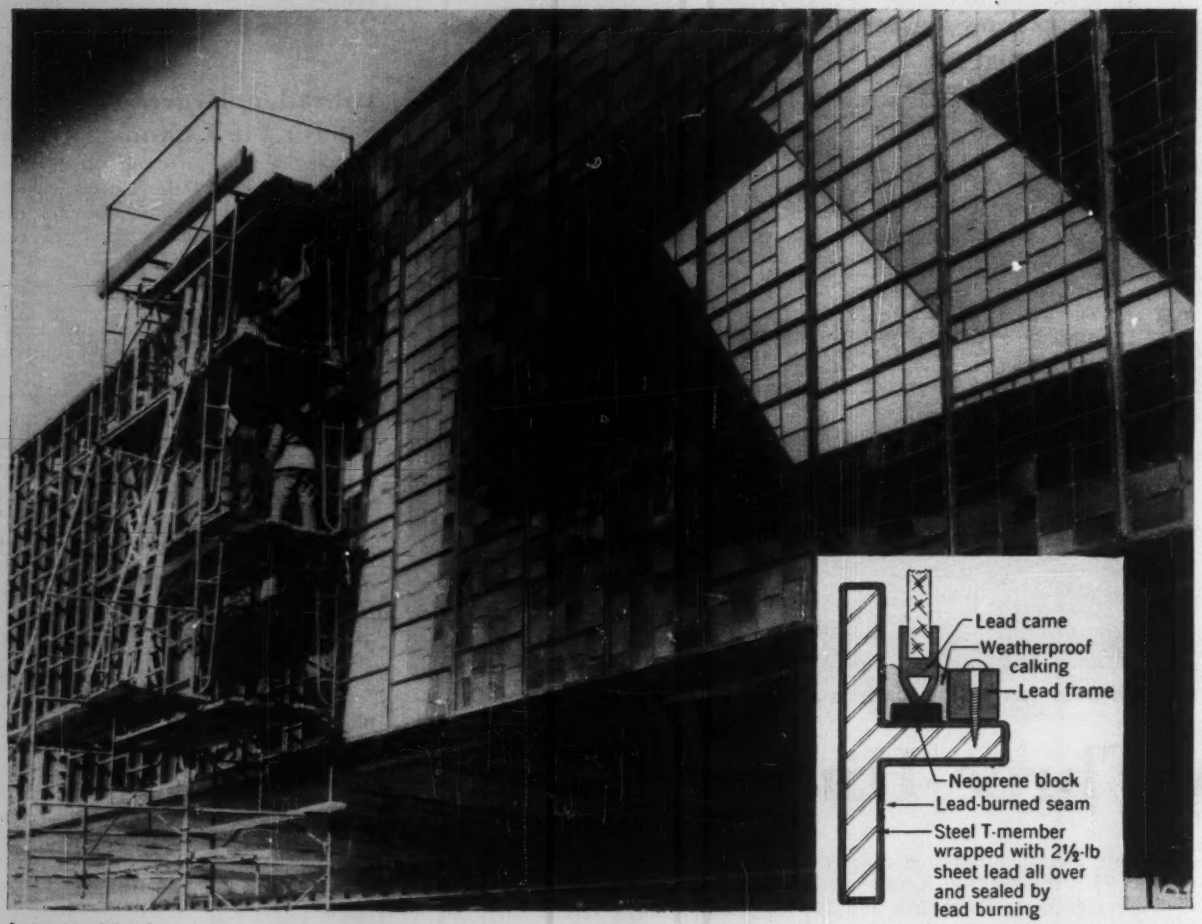
• **Brazilian hotels**—The Hilton Hotel chain is constructing two hotels in Brazil. One is a $6-million, 500-room hotel in Rio de Janeiro; the other is the $3-million Hilton Inn, a 300-room hotel in the new capital of Brasilia. Sao Paulo is being considered for a third Hilton hotel.

• **Karachi hotel**—An $8-million hotel soon will be constructed in Karachi, Pakistan. The hotel is one of several schemes planned by the government to promote Pakistan's tourist trade. Capital for the 400-room hotel will be subscribed one-third by private local enterprise, and the balance by the government.

• **Another autobahn**—The East German government announced it will begin construction of its first postwar autobahn in 1962. It will be a $28-million expressway linking East Berlin with the Baltic Sea port of Rostock, 125 miles to the northwest. Completion is scheduled for 1965. The route will have two 11-ft lanes in each direction. Capacity will be 3,600 vehicles an hour each way.

• **Togetherness in Nigeria**—A $14.7-million, 1-mile-long highway bridge over the Niger River between Onitsha and Asaba will provide the first direct link between the eastern and western regions of Nigeria. The only connection up to now has been a ferry. About 400 miles to the northwest at Jebba, there is a rail and highway bridge.

• **Short-cut cut**—There is new interest in Canada in a 274-year-old proposal to connect the Bay of Fundy with the St. Lawrence by digging a 16-mile canal. The canal would cut 500 miles from the sea route between the eastern seaboard and the Great Lakes ports. A recent feasibility report says a one-lock, 35-ft-deep, 330-ft-wide canal would cost $90 million.


Lead came
Weatherproof calking
Lead frame
Neoprene block
Lead-burned seam
Steel T-member wrapped with 2½-lb sheet lead all over and sealed by lead burning

Designed by: Robert Sower
Executed by: Rambusch Decorating Co.
Wrapping and Burning of Lead to Steel by John F. Abernathy & Co.
Architects: Kahn and Jacobs

Section through transom and light shows lead wrapping for the steel, lead came of the light, and the lead retaining frame.

Jet-Age Renaissance of Stained Glass Windows

Twenty-five tons of lead on the job...at New York's Idlewild International Airport. Lead serves as the "wrap" for the structural steel of the imposing stained glass window on the new American Airlines Passenger Terminal.

The non-objective stained glass window, which blends classic aesthetics with jet-age functionalism, extends 317 feet across the upper level of the terminal, and is 22½ feet in height. Lead helped make its construction possible and will make this window practically maintenance free.

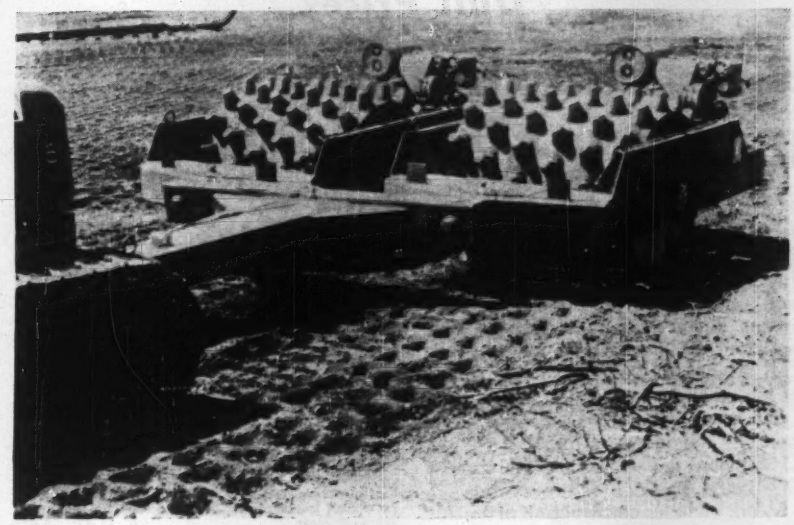
The window consists of 78 panel frames, each holding 12 units composed of several pieces of stained glass held in place with lead cames. The frame structure is welded from steel T-sections to form mullions and transoms, which in turn are wrapped with 2½ lb. sheet lead. Hermetic sealing is achieved by lead-burning the seams so that the finished window is weatherproof, rattle-free and impervious to "sonic boom." A fitted lead retaining frame is secured with stainless steel screws to complete the structure.

Wrapping and burning 25 tons of lead onto structural steel, and the fabrication and glazing of 936 sections, requiring 3½ tons of lead, was readily accomplished and construction was completed several weeks ahead of schedule.

For additional information on lead and how lead products can assist you, write: Lead Industries Association, 292 Madison Ave., New York 17, N.Y.

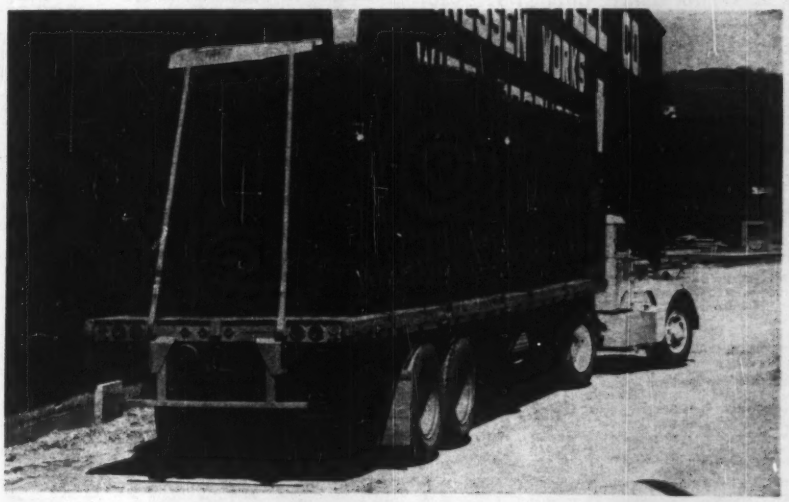
LOOK AHEAD WITH LEAD

2548



Sheepsfoot Roller Also Vibrates

The Model CF30 aerator-compactor is a vibratory sheepsfoot roller. First of its kind, the roller can be towed by a small crawler tractor in single, double or triple hitch. On a recent Ohio test, the roller compacted 18-in. lifts of glacial fill to 90% standard Proctor density in three passes at 2 to 3 miles per hour, according to the manufacturer. The unit is said to be useful in aerating and drying excessively wet soils. VIBRO-PLUS PRODUCTS, INC., STANHOPE, N. J.



Hinged Road Fabric Easily Shipped

A new style in welded wire reinforcement features an off-center hinge running lengthwise on a sheet of the fabric.

Hinged fabric folds flat in slightly more than half its full width and can be stacked easily within the 8-ft width limit of a truck bed or gondola, thus eliminating the need for special cradle trucks or other cradling equipment for shipping, and providing easily handled bundles for lifting.

A single sheet of Pittsburgh Steel Products hinged road fabric, folded and flat, can be handled by two men, according to the manufacturer. Because flatness is protected in shipping and stacking, the sheets are said to lie flat when installed.

The fabric is available in any style and gage normally used in roadbuilding. PITTSBURGH STEEL CO., GRANT BUILDING, PITTSBURGH 30, PA.

Concrete Core Drill Uses Induction-Type Motor

A core drill designed to penetrate masonry, stone, refractories and concrete (including the toughest steel-reinforced concrete) features a new method of transmitting power to the core bit. The drill uses an induction-type motor with direct drive to the spindle instead of v-belt transmission arrangement or the use of "universal type" motors.

Oversize steel gears for the gear reducer make it capable of withstanding repeated abuse. A gear ratio that permits the motor itself to operate at relatively low speed is another feature.

Full directional drilling, in which the drill head can be rotated 360 deg on a 3-in. tubular steel column, permits drilling at any angle with the base of the drill remaining on any horizontal surface.

Other features of the drill are a load indicator that shows optimum drill pressure and operating speed at all times; automatic shut off when overloaded or when voltage supply is not right; ease in raising or lowering the drill head.

Drills are available in three models, the model D-30 for holes up to 14 in., the D-20 for holes up to 6¼ in., and the DH-20, a hand-held drill, for holes from ½ in. to 2 in. CLIPPER MANUFACTURING CO., 2800 WARWICK, SUITE 156, KANSAS CITY, MO.

Steel Gate Valves Have Flexible Wedge Disk

Steel gate valves with a flexible wedge disk are available at no increase in price over conventional solid-wedge-disk gate valves, the maker states.

Available in two classes—150 lb and 300 lb—the valves are designed for rugged service in oil refineries, power plants, chemical plants and other industrial plants. Working pressure of the 150-lb valve ranges from 40 psi at 1000 F to 275 psi at 100 F. The 300-lb valve has a range from 85 psi to 720 psi over a similar temperature range.

The flexible wedge disk permits easy operation, even if closed while hot, and then allowed to cool. As the body seats pinch the disk, it flexes slightly to conform to the new seating position. The valves do not stick closed, they seat and unseat with minimum torque, thus reducing scrape and wear of disk and seats. Minor misalignment of seats due to pipeline deflections is also compensated for by the flexible wedge disk. CRANE CO., INDUSTRIAL PRODUCTS GROUP, 4100 S. KEDZIE AVE., CHICAGO 32, ILL.

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LESCHEN WIRE PORTER ROPE DIVISION

H. K. PORTER COMPANY, INC.

Contract item changes priced for . . .

Bulk Materials Handling Plant

Claude Everett Construction Co., Houston, will build a bulk materials handling plant for the Harris County Houston Ship Channel Navigation District, on the left descending bank of Greens Bayou at its intersection with the Houston Ship Canal in Houston. E. B. Mansfield Co., Pasadena, Tex., is the consultant.

The award at $1,234,183 was 2.8% over the engineers estimate. It was 7.5% below the second bid and almost 19% below the high of the six bids.

Work includes construction of a plant railway, roads, water, electric and conveyor systems, but does not include the dock and the travelling loader and unloader on the dock.

The Navigation District furnishes rail, tie plates and angle bars.

Rail, water and truck transportation is accessible to the site. The railhead is only one mile from the project.

Prevailing wages range from a high of $2.375 for skilled, through $1.25 for semi-skilled, to $1.00 for common laborers.

The six bids on this bulk materials handling plant included:

1C	Claude Everett Constr. Co., Houston, Tex.	$1,234,183*
2	Brown & Root, Inc., Houston	1,334,227*
6	George Consolidated, Houston	1,521,730*
EE	E. B. Mansfield Co., Pasadena, Tex.	1,200,700

* Base bid, less adjustment for alternate 1

Bids: 2-24-60 Items	Unit	Quantity	Unit Prices	
Plant constr, excl of RR, road & earth work	ls	job	$900,110	$954,120
Ties, #4 cross	ea	9,257	4.25	4.10
switch	Mbm	29.37	125.00	125.00
Spikes, 6" x 5/8"	ea	48,625	0.10	0.10
Trk bolts w sq nuts, 1 x 5½"	keg	33.60	40.00	40.00
Hi-power lock washers	M	3.36	100.00	120.00
Turnout in existing track #7, 115#, cip	ea	2	2,200	2,250
in new trk #7, 115#, cip	ea	6	2,000	2,075
Ballast for track, in pl, – slag	t	11,435	2.90	2.65
washed shell	t	5,430	4.50	3.60
cmt stab shell	t	1,264	5.75	6.00
Track, lay complete	tr ft	15,977	1.00	1.15
Gage rods, cip	ea	670	5.00	5.50
Improved fair rail anchors, in place	ea	494	0.60	0.65
Grease rail ends	ls	job	100.00	100.00
Creo timbers in pvmt, sized, in place	Mbf	18.6	270.00	300.00
Asph conc, hot mix, in pl, pvmt 1½" thick	sy	159	1.00	1.20
fill around rails	t	36	12.00	12.50
Galv screws, drive in pl, ½ x 10"	ea	1,724	0.20	0.26
½ x 7"	ea	64	9.20	0.26
Compromise bar in place, 54 LH, 54 RH	ea	108	16.00	22.00
Navig Dist matl, handle	ls	job	8,500	8,500
Turnout in new track with spring switch, cip	ea	1	2,400	2,400
Derail, cip	ea	1	50.00	60.00
Track scale switch	ea	2	1,200	1,300
ties	ea	70	8.00	8.50
Grouting under ties	ls	job	1,000	2,500
Track, lay across under-track pit	ls	job	150.00	150.00
Exc matl, dispose of	cy	500	0.35	0.60

Bids: 2-24-60 Items	Unit	Quantity	Unit Prices 1C	2
Grading				
Clear & grub	ls	job	$1,500	$800.00
Exc, load or stockpile, for special undercut	cy	1,000	0.50	0.38
matl for undercut bkfl & embkmt, haul & load	cy	65,000	0.24	0.20
Bkfl, spread & compact in undercut areas	cy	1,000	0.25	0.60
Exc, load or stockpile, excl undercut	cy	12,200	0.30	0.20
Compact nat gnd & cut sects	sy	18,300	0.20	0.13
Embankment, spread fill in 15-20" layers, incl dozer compaction	cy	56,000	0.15	0.18
8" compact layers, incl comptn (95% AASHO)	cy	13,000	0.35	0.00
Excavation from stockpile	cy	40,000	0.25	0.36
borrow pit	cy	40,000	0.25	0.10
Subsoil drainage	ls	job	45,000	78,020
Pumping, dewtr undct areas, fully oper pump, 1.2"	hr	20	2.50	2.20
2.4"	hr	40	4.00	2.75
3.6"	hr	40	8.00	5.00
Bulldoze & oper, D7 or equal	hr	30	13.00	12.00
Dragline, fully oper, extra trn (min pay 3 x hr/day)	hr	40	13.00	12.00
Extra man hrs, skilled	hr	40	4.00	3.35
unskilled	hr	40	1.75	1.85
Truck road, sand stab shell, compacted	cy	6,850	1.70	2.90
slab, top crse, compacted	cy	3,450	4.00	4.50
CMP culvert, 30" ϕ	lf	350	15.00	14.00

Adjustment Unit Prices for Changes in Scope of Work

Add for:				
excavation above elev +7'				
by hand	cy		....	6.00
by machine	cy		....	1.00
excavation below elev +7'				
by hand	cy		....	8.00
by machine	cy		....	1.50
drilled ftg plinths, in pl excl reinf stl,				
above elev +7', 16" ϕ	lf		2.25	4.20
20" ϕ	lf		3.50	6.60
24" ϕ	lf		5.00	9.50
30" ϕ	lf		8.00	14.70
36" ϕ	lf		11.50	18.95
below elev +7', 16" ϕ	lf		3.50	5.20
20" ϕ	lf		5.50	7.60
24" ϕ	lf		8.00	10.50
30" ϕ	lf		12.50	13.70
36" ϕ	lf		17.50	20.00
steel reinf for footings	t		240.00	220.00
Deduct for:				
excavation above elev +7'				
by hand	cy		....	2.00
by machine	cy		....	0.50
excavation below elev +7'				
by hand	cy		....	3.00
by machine	cy		....	0.75
drilled ftg plinths, in pl excl reinf stl,				
above elev +7', 16" ϕ	lf		1.40	0.50
20" ϕ	lf		2.20	1.20
24" ϕ	lf		3.15	1.80
30" ϕ	lf		4.90	2.70
36" ϕ	lf		7.10	3.90
below elev +7', 16" ϕ	lf		2.25	0.50
20" ϕ	lf		3.50	1.20
24" ϕ	lf		5.00	1.80
30" ϕ	lf		8.00	2.70
36" ϕ	lf		11.50	3.90
steel reinf for footings	t		200.00	100.00

Adjustments in Lump Sum Bid for Plant Construction

Deduct for:				
*alt 1, a dockside, outbnd & inbnd transv convey sys using 42" slab belt on 20° troughing idler sys, compl w pulleys & appurt, sizad for 42" instead of 36" belt system	ls	job	3,700	4,570
alt 3, 4160V, 3 phase fused type switchgear at primary substation	ls	job	2,150	4,660

* Contract cip Complete in place
Commence: 3-15-60 Completion schedule: 200 working days
Liquidated damages: $500/day

Materials Prices

Monthly Market Quotations By ENR Field Reporters

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized
Atlanta	$186.10pe	$154.95pkke	$309.90pe	$348.65pe	.....	.....	$33.20uu	$36.70uu	$36.50hh	$28.50hh	$28.50hh
Baltimore	217.00	231.00	434.00	491.00	602.00	690.00	36.00	41.00	35.80	23.40	.....
Birmingham	135.00pee	152.00pee	.....	303.00p	376.00p	465.00p	27.00ff	38.00jj	38.28mm	20.87mm	26.33gmm
Boston	232.00†mm	248.00†mm	463.25†mm	556.00†mm	.....	.....	43.50p	58.00p	42.00§	34.00§	.....
Chicago	137.00ll	149.00ll	280.00ll	.....	.....	.....	32.00	34.00	38.00ll	35.20ell	.....
Cincinnati	179.00mmyee	190.00jjmmvv	355.00jjdmm	390.00jjmmvv	422.00jjmmvv	500.00jjmmvv	48.00jk	47.00jk	29.10jmm	29.10jmm	29.10jmm
Cleveland	205.00tt	219.00tt	.....	465.00tt	.....	709.00tt	43.25tt	47.25ggtt	32.75ptt	28.00ptt	.....
Dallas	155.00	155.00	306.00	370.50	452.25	560.00	30.00	50.00	41.80	24.58	28.50
Denver	170.00	185.00	310.00	310.00	390.00	442.00	35.00zz	54.00	50.00p	44.00p	46.00p
Detroit	257.00mm	274.00mm	514.00mm	582.00mm	767.00mm	876.00mm	53.50pmm	54.00pmm	38.00mm	30.00mm	40.00mm
Kansas City	158.00	158.00	312.00	312.00	400.00	500.00	34.00	34.00	36.26	34.26	29.76
Los Angeles	r	r	r	r	r	r	38.00uu	.....	38.00nnll	38.00nnll	39.00nnll
Minneapolis	208.00pe	225.00pe	452.00pe	225.00pee	.....	.....	49.00vpe	57.50ppe	50.00bbe	40.00bbe	52.00bbde
Montreal	168.78auqee	180.93auqee	325.00auqee	220.00qee	400.00qee	.....	48.25bll	56.30bll	39.00	22.00	13.25
New Orleans	198.00	198.00	370.00	370.00	.....	.....	42.00	55.00	44.00	32.00	32.00
New York	185.00h	197.00h	294.00ch	297.00hn	.....	.....	46.00p	.....	40.00p	38.00p	.....
Philadelphia	202.10ss	215.60ss	404.20ssxx	485.10ss	.....	.....	42.00mm	50.00mm	40.00mmp	21.50	21.50
Pittsburgh	200.00t	213.00t	400.00t	453.00t	607.00t	693.00t	42.00t	48.00t	30.00t	26.00t	36.00t
St. Louis	180.00mmpp	190.00pp	385.00pp	401.00ppp	459.00pp	621.50pp	44.00mmpp	45.50pp	1.00aapp	.80aapp	1.35aapp
San Francisco	156.85*mm	177.10*mm	235.30dd*mm	159.40qqmm	.....	.....	43.00*mm	43.00*mm	29.24mm	29.24mm	31.74mm
Seattle	235.00pt	270.00pt	490.00pt	265.00pwt	.....	.....	57.00t	71.00t	52.00bbt	38.00bbt	4.50mbbt
Toronto	169.00rr	185.50rr	360.00rr	281.50frr	405.00rr	.....	27.00rr	65.00rr	42.00mm	38.00mm	36.50mm

*§ F.o.b. yard. **• F.o.b. plant Stockton. *† F.o.b. yard Roxbury. *a Smooth. *b $4.50 del. *c 8 x 12 x 12 in.-6 cell. *d Pulverized hot. *e less 8% disc., 10th., *f 8 x 8 x 12. *g Lumps, $28.72. *h F.o.b. trucks, job site N.Y.C. *i 80 lb sacks. *j Truck load or over. *k $1.00 discount per M, 10 days. *l Red face. *m Per bb. 180 lb. processed. *n 7¾ x 7¾ x 12. *o Mason's double hydrated pressure. *p Truck lots. *q Provincial and Municipal tax extra (8%). *r Not used: earthquake danger. *s 8 x 16 x 12. *t less 2% disc., cash. *u Incl. Federal tax. *v Sand lime. *w 5 x 8 x 12. *x dumped. *y Chi common. *z Pebble; 80 lb sack. *aa 80 lb sack. *bb LCL. *dd 8 x 12 x 12. *ff 80% common. *gg Smooth. *hh less 2% disc., cash. *ii F.o.b. plant. *jj rough: smooth: $40. *kk 3½ x 11½ x 11½. *ll less 2% disc. 10th. *mm less 2% 10 days. *nn F.o.b., L. A. *oo less 2%, 30 days. *pp add 2% sales tax. *qq 8 x 5½ x 11½. *rr 2½% disc., 10 days. *ss 5% disc., 10 days. *tt less 2% disc., 15th. *uu less 50¢/M. 10 days *vv 4000 pcs. and over.

PAINT, ROOFING—F. O. B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600 lb. (Approx.) bbl. F.O.B. Plant Dry a C	WHITE LEAD Per 100 lb. in 100 lb. cases In oil	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 65–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$13.75ggJO	$24.00ggJ	$3.59	$3.86	$3.31	$2.90kk	$2.25kk	$2.85kk	$0.67kk	$65.35kk
Baltimore	17.50pp	24.00	3.00	4.40	3.50	3.06	3.67	4.04	.50	54.00
Birmingham	26.00†J	29.00†J	3.90J	3.40J	.....	2.95†mm	2.17ii†mm	3.17ii†mm	.45jmm	48.00eemm
Boston	24.95†oomm	26.90†mmm	.....	.....	.....	3.70q	2.45g	2.83g	.55g	58.00g
Chicago	15.25rJqqpp	24.00†J	.....	.....	.....	3.45ukk	2.50ukk	3.00ukk	48.00bbtkk	57.70†kk
Cincinnati	15.25†JO	24.00†J	.....	.....	.....	2.74mm	2.02omm	2.42omm	.53ymm	53.96Hmm
Cleveland	25.65†	26.90†	2.63ggP	2.78aagg	3.44ggg	2.74q	2.11o	2.42o	.39y	49.00gg
Dallas	22.50	23.50M	.....	3.25B	.....	3.00u	3.00o	3.00o	.470	66.00hh
Denver	23.85n	24.00	3.70	5.10	3.70	2.71	1.93o	2.80o	.50ff	50.00
Detroit	15.75r	24.00rr	2.70mm	3.95mm	2.70mm	2.82mm	2.05ommll	2.42ommll	.56fmm	49.00mm
Kansas City	26.90lggoo	25.65	3.99	3.43	3.01	4.60mm	3.13omm	3.13omm	.92y	.....
Los Angeles	16.25yy	22.00	3.30n	4.50n	4.20n	3.40ukk	2.40n†ikk	l	.75nnpkk	l
Minneapolis	16.75N	21.50kk	.....	.....	.....	2.50kk	1.95h†kk	2.36h†kk	.52ikk	50.00rkk
Montreal	19.45O	26.00ss††	5.52Dff†	6.55ff	5.10kff†	5.40	4.65f	4.65f	1.60	4.40uu
New Orleans	23.00Jpp	24.00J	.....	.....	.....	2.78	1.98	2.85	.680	45.50
New York	15.25ooO	29.75	.....	.....	.....	2.79zz	2.05zzo	2.46o	.52s	49.00*
Philadelphia	16.25Omm	24.75mm	3.35mm	3.90mm	2.65Rmm	4.70	3.60	2.85	.515	50.00
Pittsburgh	21.00mggJ	24.00J	2.30†EJ	2.25†FJ	2.25†GJ	2.90sH	2.15sH	2.15H	.56H	55.00H
St. Louis	25.65†m	26.90	.....	.....	.....	3.25iimm	2.37kk K	2.84kk K	.48y K	65.00 K
San Francisco	26.70mm	26.90mm	3.30mm	4.30mm	3.80mm	2.87mm	1.72aaimm	2.59mm	.46jf	54.00
Seattle	13.35HO	24.00H	.....	4.19eeffJ	.....	3.70qeeH	3.06AccH	.....	.59ee	.....
Toronto	14.70	20.85	5.15J	6.18J	5.95J	3.25	2.75aae	2.75o	1.01f	56.00A

*† Delivered. * Note: Red lead in oil 80% higher than white lead in oil. **• Aver. wt. approx. 425 to 550 lb drums. *a Red lead prices change frequently due to pig lead price changes. *b U.S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e Per 108 sf roll. *f Per 432 sq ft. *g F.o.b. yard Roxbury. *h Per roll, 65 lb. *i Net carload prices, Minneapolis and vicinity. *j 45 gal containers. *k Over 80% ferric oxide. *l Not used. *m 100 lb. keg. *n F.o.b. city. *o Per 60 lb roll. *p 6-drum, 50 gal each. *q Per 90-lb roll. *r F.o.b. factory, Chicago. *s Truckload. *t Incl. Federal tax. *u Per 90-lb square. *v Per ton. *x Ready-mixed. *y 55-gal container. *z Drums. *aa 15 lb. *bb Roofers coating and cement. *cc LCL, truck delivery. *ee Asphalt pitch in 100 lb package. *ff 5-ga drums. *gg F.o.b. factory. *hh Incl. freight. *ii Per 324 sf roll. *jj Asbestos roof coating. *kk less 2% disc., 10th. *mm less 2% disc., 10 days. *oo 100 lb bbls. *pp 50 or 100 lb bags. *qq 500 lbs or more *rr F.o.b. plant, Detroit. *ss 50 lb bbls. *tt 25 lb kegs. *uu 250 lb bbls. *xx Sept.: Rolls revised to $2.75, Asph. Felt revised to 1.71. *yy Sept. revised to $12.00. *zz Sept. revised to $2.80. *A 400 lb barrels. *B ASTM Spec. D962-49. *C 95%. *D Std. black. *e Mill. spec.: E TTP27; F TTY81; G TTP31. *H less 2% disc., cash. *I Per 100 lb. *J less 1% disc., 10 days. *K add 2% sales tax. *L CL. *M 1 ton or more. *N under 500 lbs, add $1. *O 50 lb. bag.

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER‡ Neat per ton	Gauging per ton	VERMICULITE‡ Home Insulation pellets	Plaster aggregate	Concrete Aggregate Unitreated	PERLITE‡ Plaster Aggregate	Concrete Aggregate Untreated	ALUMINUM Flat .100" th 36"x108" & 48"x144" per lbjt	SHEET† Corr roof .032" th 35"x12' per shu	STAINLESS STEEL† SHEET-TYPE 302g 20 ga 48"x96'–120" per cwthh	28 ga 36"x120" per cwtmm	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ⅜"b	½"c
			per bag of 4 cu ft										
Atlanta	$32.00ss	$42.00ss	$1.55ss	$1.65ss	$1.80ssz	$1.65ss	$1.65ss	$0.463noo	$27.17nY	$65.68nzz	$74.43nzz	$0.1762ss	$0.2464ss
Baltimore	24.00	35.70	0.95	1.15	1.15	1.15	1.55	0.462	0.451r	63.00	71.25	0.16	0.23
Birmingham	37.00ss	43.00ss	1.55ss	1.55ss	1.60lss	1.27ss	1.27lss	0.455M	9.62K	65.54K	73.79K	0.20ss	0.27ss
Boston	24.00	30.00	1.40	1.40	1.40	1.55ss	1.55ss	0.462	24.66pAA	64.42dd*zz	72.67dd	0.1762ss	0.2464ss
Chicago	26.80ll	26.80ll	1.55	1.60	1.60l	1.66	1.60	0.516z	32.88p	64.15ee	72.40ee	0.1814	0.2545
Cincinnati	23.85*ss	23.85*	1.75*ss	1.75*ss	1.85*ss	1.85ss	1.90ss	0.514	9.21	65.30zz	74.05zz	0.1814ss	0.2545ss
Cleveland	28.00N	45.00N	1.14ss	1.16ss	1.24lss	1.45ss	1.45ss	0.455ss	8.48	63.33oozz	71.58oozz	0.1723	0.2418
Dallas	30.65	30.65	1.05	1.21	1.37	1.21	1.32	0.463	0.461r	64.09	72.34	0.1668	0.1986
Denver	27.00	27.00	1.50	1.40	1.50	1.50ss	1.60ss	0.475	10.89	65.32gg	73.57gg	0.1772	0.2380
Detroit	28.00ss	28.00ss	1.27ss	1.31ss	1.40ss	1.45kll	1.50kll	0.475s	10.35s	63.00azz*	71.25azz*	0.2058	0.2887
Kansas City	30.00	35.00	1.19E	1.21E	1.29lE	1.21	.....	0.463	24.66ggvvp	67.50E	76.25E	0.1814	0.2545
Los Angeles	27.00tt	28.00tt	1.25kll	1.20kll	1.45tt	1.11	1.11	0.515	9.77Z	65.02	73.27	0.1814	0.2545
Minneapolis	35.00F	35.00F	1.65ll	1.80F	1.95F	1.40S	1.50S	0.485	16.23	63.61GR	69.61ffG	0.1446f	0.2025
Montreal	27.60h	35.60h	1.25h	1.40h	1.60h	1.15s	1.15s	48.95AH	12.10H	65.75H	.....	0.1978	0.2089
New Orleans	34.00	48.00	1.35P	1.35P	1.45P	1.21P	1.21P	0.463	24.90	64.00Y	85.60Y	0.2058	0.2887
New York	27.00	35.00	1.40	1.35	1.40	1.35	1.45	0.485aT	0.2466aXAA	64.08ss	72.33ss	0.1814R	0.2545R
Philadelphia	26.50	31.00ss	1.40ss	1.40ss	1.55lss	1.35ss	1.35qqss	0.485	9.46	63.71	71.96	0.1814	0.2545
Pittsburgh	30.00nn	31.00nn	1.25nn	1.30nn	1.40mm	1.50nn	1.50nn	0.475	10.39	63.00	74.50pp	0.1600	0.1800
St. Louis	30.00uu	42.00uu	1.50uu	1.60uu	1.65uu	1.50uu	1.60uuY	0.475	10.69	63.39 Kmmgg	69.39yuugg	0.1814fmss	0.2545fmss
San Francisco	29.50ss	30.50ss	1.38ss	1.38ss	1.50ss	1.38ooss	1.58ooss	0.575	10.83	65.00K	77.25K	0.1814	0.2545
Seattle	42.40nn	45.60nn	1.55nn	1.35knn	1.85lnn	1.50k	.....	0.46D	10.40D	54.02D	73.27D	0.1756	0.2460
Toronto	.82	1.31	1.10	1.12	1.30	1.20Q	.....	0.4295	26.00ap	73.74	86.52	0.3063	0.3418

‡trucklots, delivered †fob warehouse *fob city *a delivered *b ½" O.D. *c ¾" O.D. *d per sf *e 34" x 60" sheet *f per 100 ft *g 5 tons & up: cold roll, anneal & pickled 2B finish *h incl. Federal tax *i add 25¢ for pint of additive *j 1100 & 3003 alloy, mill finish *k bag of 3 cu ft *l treated with air entraining agent *m 2-10M ft *n fob mill fr equalized with nearest stocking competitor *o 250 sacks or more *p 100 sq ft *r per lb *s 30 lb bag *t 36" x 108":-10.81 lb/sh; 48" x 144": 21.7 lb/sh *u 19.31 lb/sh *v fob plant *w 48" x 144" *x 0.11"th *y 27 gauge *aa 16M lb & up *bb Per 50 lb bag *dd add $1.00 cwt boxing *ee 4 tons & up *gg add $2/cwt boxing; $0.75/cwt on skids *hh Theoretical wt for 48" x 96"; 60.4-lb. per sh *ii 300-bag lots *jj 100-lb bag *mm Theoretical wt; 19.7-lb per sh *nn 2% cash *oo skid packed *pp type 304 *qq Philadelphia and suburbs. *rr less 2% disc. 15 days. *ss less 2% disc. 10 days. *tt less 2% disc. 10th. *uu add 2% sales tax. *vv Type N. *xx less ½% disc. 10 days. *yy .021 ga. *zz .061" th. *A Per 100 lb. *C 15M lb. *D less ½% for cash. *E Quantity differential. *F less 5% disc. 10th. *G less ½% disc. 10th. *H Fed. tax exempt. *K less ½%, 10 days. *L 5% disc. 30 days. *M 3003: .482 for 1100. *N less 2%, 15th mo. *O less $2, cash & carry. *P less 2%, 15 days. *Q per ton. *R revised *S add .10/bag under 200 bags. *T 5000# quantity on 4000# skids. *U 30 Msf quantity; $0.245 in 10 Msf quantity. *X per sq ft. *Y Per sheet. *Z 6,000 lb or over. *AA 30,000 sf or over.

Labor and Materials Prices

Monthly Market Quotations by ENR Field Reporters

HOURLY WAGE RATES—Base rate + fringe benefits

	Common Labor: Building	Common Labor: Heavy Const	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Truck drivers: 1½ T	Truck drivers: under 4 cy	Truck drivers: over 4 cy
Atlanta	$1.90	$1.90	$3.90	$3.25	$3.45+7½¢	$3.60	$3.39	$3.50+10¢	$3.80+20¢	$1.90	$2.00	$2.25*B*
Baltimore	2.27+7½¢	2.27+7½¢	4.10+10¢	3.50+7½¢*f*	3.90+7½¢	3.35/4.05+10¢*A*	3.80+10½¢	3.75+7½¢	3.74+9½¢	2.15+7½¢	2.15+7½¢	2.25+7½¢
Birmingham	1.85	1.95	3.95	3.15	3.50+10¢*mn*	3.18	3.27	3.65	3.58+12½¢*p*	1.90	2.10	2.35
Boston	2.65+10¢	2.55+10¢	3.80+20¢	3.65+10¢	4.02+20¢	4.05+20¢	3.65+45¢	3.90+25¢	3.95+27¢*R*	2.70+23¢	2.70+23¢	2.70+23¢
Chicago	3.02½+7½¢	3.02½+7½¢	4.225+10¢	3.91+20¢*o*	4.35+16¢*n*	3.90+5¢	3.95+23¢	4.10	4.10+25¢	2.55+175¢*R*	.....	.....
Cincinnati	2.90	2.80	4.025+12¢	3.90*D*	3.95+10¢	3.575/3.80*A*	4.075+.04	4.09+.409	4.10+9½¢	2.65+62½¢	2.70+6½¢	2.75+6½¢
Cleveland	3.37*b*	3.285*b*	4.085+10¢*b*	4.11*b*	4.01+10¢*b*	4.11*b*	4.11*a*	4.17*b*	3.91+20¢*b*	2.92+15¢*a*	2.92+15¢*a*	2.92+15¢*a*
Dallas	1.80	1.80	4.00	3.35*b*	3.55+7½¢	3.50*B*	3.75+13¢	3.625+7½¢	3.575+8½¢	1.80/2.625	1.80/2.625	1.80/2.625
Denver	2.32	2.32	4.00	3.60	3.66+10¢	3.25	3.75+12¢	4.05+14¢	3.95+10¢	2.40*B*	2.75*B*	2.90*B*
Detroit	2.90+34¢	2.90+34¢	3.98+33¢	3.63+46¢	4.00+27½¢	3.63+39½¢	3.75+38¢	4.00+52	3.835+17½¢	3.03	3.03	3.03
Kansas City	2.58	2.63	4.075	3.625	3.675	3.445	3.75	3.75+355¢	3.80+9½¢	2.555	2.555	2.63
Los Angeles	2.88+10¢	2.88+10¢	4.20+25¢	3.825+20¢	4.07½+23½¢	3.81+20¢	4.25+42½¢	4.40+44	4.10+52¢	3.365+10¢	3.365+10¢	3.555+10¢
Minneapolis	2.85	2.85	4.025	3.45	3.62	3.60	3.60+33¢	3.70+40¢	3.77+20¢	2.85	2.85*d*	3.00
New Orleans	1.87½¢	1.87½¢	3.67½+7½¢*d*	3.25*d*	3.55+10¢*d*	3.325+7½¢*d*	3.19+5¢*jk*	3.77+7½¢	3.70+7½¢*dl*	3.325+7½¢*d*	3.375+7½¢*d*	3.325+7½¢*d*
New York	3.45+28¢*c*	3.45+28¢*c*	4.80+60¢	4.55+36¢*k*	4.60+47¢*j*	4.80+38¢	4.50+62¢	4.45+1.424	4.50+54¢	2.35+22½¢	3.40+28½¢	3.40+28½¢
Philadelphia	2.60	2.65+10¢	4.25+17¢	3.885	4.30+23¢	3.935/4.215+10¢*A*	4.15+15¢	4.37½+16¢	4.10+31½¢	2.45+15	2.45+15½¢	2.45+15
Pittsburgh	2.725+20¢	2.55+20¢	4.45+20¢	3.975+20¢	4.15+20¢	3.73+20¢	3.95+20¢	4.60+34½¢	4.15+20¢	2.59+20¢	2.635+20¢	2.735+20¢
St. Louis	2.875+10¢	2.875+10¢	4.05+32½¢	3.825+10¢*c*	3.85+7½¢	3.95	3.90+07½¢	4.11+31¢	4.07½+25½¢	2.90+15¢	3.10+15¢	3.20+15¢
San Francisco	.045+10¢	3.045+10¢	4.25+42½¢	3.725+36¢	4.075+22½¢	3.60/3.76+28¢	3.79+63¢	4.22+29¢	4.14+59¢	3.00+11¢	2.75+20	2.89+20¢
Seattle	3.15+10¢	3.15+10¢	4.15+10¢	3.38+20¢	3.76+10¢	3.59+20¢	3.72+30¢	3.80+26¢	3.81+24¢	3.15+20¢	3.15+20¢	3.35+20¢
Montreal	1.75+4¢*q*	1.75+4¢*q*	2.55+5¢*q*	2.35+5¢*q*	2.55+6¢	2.35+5¢	2.65+6¢	2.45+5¢	2.62+6¢*s*	1.75+4¢	1.75+4¢	1.75+4¢
Toronto	2.00+8¢	2.00+8¢	3.15+13¢	2.90+12¢	3.05+12¢	3.15+13¢	3.20+21¢	3.52+14¢	3.35+13¢	2.05+15¢	2.05+15¢	2.05+15¢

	Tractor Operators Incl. bulldozer: 34-49 hp	70-100 hp	100 & over	Tractor scraper 15-18 cy	Power cranes & shovels: ½ cy	¾ cy	Motor grader oper	Air comp oper	Air too l oper
Atlanta	$3.00	$3.075	$3.075	$2.925	$3.45	$3.60	$2.925	$2.85	$2.00
Baltimore	3.65+10¢	3.65+10¢	3.65+10¢	3.65+10¢	4.05+10¢	4.05+10¢	3.65+10¢	3.25+10¢	2.25+7½¢
Birmingham	3.18	3.18	3.18	3.18	3.18	3.18	3.18	2.77	2.05
Boston	3.52½+20¢	3.52½+20¢	3.52½+20¢	3.52½+20¢	3.90+20¢	3.90+20¢	3.52½+20¢	3.45+20¢	2.80+10¢
Chicago	3.65+5¢	3.80+5¢	3.70+5¢	3.70+5¢	4.25+5¢	4.25+5¢	3.70+5¢	3.55+5¢	3.85+5¢
Cincinnati	3.575+10¢	3.575+10¢	3.575+10¢	3.575+10¢	3.575+10¢	3.80+10¢	3.80+10¢	3.80+10¢	3.80+10¢
Cleveland	3.86*b*	3.86*b*	3.86*b*	3.86*b*	4.11*b*	4.11*b*	3.86*b*	3.735*b*	3.735*b*
Dallas	1.80/2.625	1.80/2.625	1.80/2.625	1.80/2.625	3.225*h*	3.225*h*	1.80/2.625	1.95	1.95
Denver	2.50	3.10	3.10	3.10	3.25	3.25	3.10	3.10	2.60
Detroit	3.63+39½¢	3.63+39½¢	3.63+39½¢	3.63+39½¢	3.63+39½¢	3.63+39½¢	3.63+39½¢	3.355+38¢	3.03+34¢
Kansas City	2.75	3.20	3.20	3.20	3.445	3.445	3.20	3.20	2.675
Los Angeles	4.11+20¢	4.11+20¢	4.11+20¢	4.21+20¢	4.21+20¢	4.21+20¢	4.21+20¢	3.33+20¢	3.09+10¢
Minneapolis	3.23	3.45	.....	3.45	3.67	4.03	3.23	3.12	3.00
New Orleans	3.325+7½¢*d*	3.325+7½¢*d*	3.325+7½¢*d*	3.325+7½¢*d*	3.325+7½¢*d*	3.325+7½¢*d*	3.325+7½¢*d*	2.70+7½¢*d*	1.95*e*
New York	4.175+33¢	4.175+33¢	4.175+33¢	4.30+34¢	5.05+40¢	5.05+40¢*k*	4.30+34¢	4.30+43¢	4.30+22¢
Philadelphia	3.52+10	3.665+10	3.665+10	3.79+10	4.215+10	4.215+10	3.765+10	3.41+10	2.35
Pittsburgh	3.72+20¢	3.72+20¢	3.72+20¢	3.72+20¢	3.92+20¢	3.92+20¢	3.92+20¢	3.43+20¢	2.60+20¢
St. Louis	3.95	3.95	3.95	3.95	3.95	3.95	3.95	3.40	3.40
San Francisco	3.79+28¢	3.79+28¢	3.79+28¢	3.92+80¢	4.08+28¢	4.08+28¢	3.98+28¢	3.29/3.66+28¢	3.475+10¢
Seattle	3.56+20¢	3.56+20¢	3.56+20¢	3.56+20¢	3.93+20¢	3.93+20¢	3.65+20¢	3.29+20¢	3.20+10¢
Montreal	1.95+4¢	2.18+5¢	2.18+5¢	2.18+5¢	2.45+5¢	2.45+5¢	2.18+5¢	2.05+4¢	2.05+4¢
Toronto	2.40+10¢	2.50+10¢	2.50+10¢	2.50+10¢	3.00+12¢	3.15+12¢	2.80+11¢	2.50+10¢	2.50+10¢

ENR Skilled Average (Bricklayers, Carpenters, Iron Workers): $3.95, ENR Common Average $2.642

Description of fringe benefits last appeared Sept. 17 1959. *A 1-2 drum.

DEFERRED WAGE INCREASES UNDER PRESENT CONTRACTS: 1960: a May 1; 10¢ b May 1; 12¢ k May 1; 8¢ l May 1; 10¢ m Jan. 1; 15¢ n Jul. 1; 5¢ o Jun. 30; 22½¢ s Apr. 1; 15¢ **1959:** c Dec. 1; 10¢ d Nov. 1; 10¢ e Nov. 1; 5¢.

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	Gypsum Plaster Board tapered edge per Msq ft ½"	⅝"	Gypsum Board Lath plain or perf per Msq ft ⅜" x 16" x 48"	Gypsum Sheathing tongue & groove per Msq ft ½" x 2' x 8'	Fiber Board Sheathing asph impreg & coat per Msq ft ½" sq ed	¾" T&G	Fiber Board Insulation sq edge, paint per Msq ft ½"	Mineral Wool Insulation loose, per 40-lb bag a	3" batts per M sf	Glass Fiber Insulation loose, per 40-lb bag a	3" batts per M sf	Aluminum Foil 60# Kraft Expansible 1 side foil per roll of 250 s. f.	Blanket 2 layers fo il per Msq ft
Atlanta	$65.00*F*	$55.00*F*	$42.50*F*	$68.00*F*	$72.00*F*	$127.00*F*	$75.00*F*	1.50*z*	$70.00*F*	$2.00	$80.00*F*	$4.77*qi*	.....
Baltimore	54.00	47.50	35.75	55.70	65.00	108.50	69.00	1.40*F*	67.50*F*	1.60*F*	47.00*F*	4.00*F*	$33.50*F*
Birmingham	68.90*H*	57.00*H*	47.77*H*	75.00*H*	67.50*H*	140.50*H*	83.50*H*	1.40	70.00	2.00	65.00	3.77*gG*	.....
Boston	60.00*mH*	50.00*mH*	35.00*mH*	55.00*mH*	65.00*H*	120.00*H*	79.00*knH*	1.40*bH*	75.00*H*	.....	75.00*H*	5.30*zHS*	53.50*qH*
Chicago	67.00	54.00	45.00	62.00	87.00	123.00	87.00	1.85	80.00	.....	63/65*l*	5.25*j*	.....
Cincinnati	52.50*wH*	42.85*wH*	33.05*wH*	51.16*wH*	77.00*wH*	125.00*wH*	72.50*wH*	1.45*wH*	62.50*wH*	1.45*wH*	62.50*wH*	2.85*fwJ*	50.00*wJ*
Cleveland	62.00*CF*	56.50*CF*	41.50*CF*	65.00*CF*	80.00*CF*	129.00*CF*	80.00*CF*	1.40/1.55*H*	75.00*H*	.....	67.00	14.00*iwJ*	55.00*J*
Dallas	56.25	46.85	42.50	56.25	68.75	118.00	68.75	2.00	65.69	1.45	70.67	5.00*gAG*	45.00
Denver	66.50*H*	58.50*H*	45.00*H*	68.75*H*	84.00*H*	130.00*H*	84.00	1.55*b*	65.00*wb*	2.00*b*	65.00*a*	5.25	48.65
Detroit	66.00*K*	56.00*K*	42.45*K*	66.00*K*	48.50*DK*	85.65*DK*	62.50*DK*	1.30*b*	52.00	1.85*b*	80.00	.....	.....
Kansas City	72.00*H*	62.00*H*	45.00*H*	.....	75.00*H*	122.00*H*	80.00*H*	1.40*H*	75.00*H*	1.80*H*	75.00*H*	3.60*d*	53.98
Los Angeles	*Q* 66.00*F*	60.50*F*	0.33*xF*	64.50*F*	75.00*F*	125.00*F*	80.00*F*	76.00*BeF*	83.00*F*	1.35*s*	64.00	4.40*g*	7.45*V*
Minneapolis	*F* 75.00*F*	65.00*F*	0.44*xL*	75.00*F*	95.00*F*	130.00*F*	78.00*F*	2.25*yF*	80.00*F*	2.10*F*	80.00*F*	4.95*F*	.....
Montreal	58.00*M*	49.30*M*	37/41.50*M*	53.00*M*	64.75*M*	.....	58.50*M*	1.50*M*	66.00*M*	1.50*M*	66.00*M*	9.00*qM*	56.00*M*
New Orleans	57.00*H*	52.00*H*	45.00*H*	60.00*H*	60.00*H*	140.00*H*	80.00*H*	2.00*L*	70.00*	.....	.....	.....	52.12*U*
New York	65.00*H*	55.00*H*	42.50*H*	60.00*H*	78.00	124.00	78.00	1.55*b*	68.50*k*	.....	.....	4.38*iH*	40.00*eH*
Philadelphia	*H* 53.00	46.00	37.50	53.50	70.00	120.00	70.00	1.35	50.00	1.40	50.00	3.85	83.50
Pittsburgh	74.00*K*	65.00*K*	40.00*K*	63.00*K*	60.00*K*	100.00*K*	60.00*K*	1.10*sK*	55.00*K*	1.10*sK*	55.00*K*	4.20*iqK*	38.50*K*
St. Louis	55-65.00*HO*	48-55.00*HO*	40.00*HO*	65.00*HO*	70.00*HO*	120.00*HO*	80.00*HO*	1.35*yHO*	65-75*HO*	2.00*PHO*	77.00*HO*	4.50*iqHO*	.....
San Francisco	60.00*F*	49.00*F*	0.36*xF*	61.00*F*	70.00*F*	111.00*F*	69.00*F*	1.75*F*	66.50*F*	1.75*F*	66.50*F*	5.10	60.00*F*
Seattle	68.00*K*	58.50*K*	51.50*K*	65.50*K*	65.00*K*	125.00*K*	71.00*K*	1.15*tK*	58.00*K*	1.90*pK*	51.00*tKk*	4.25*K*	46.50*EK*
Toronto	58.00	50.00	45.00*L*	67.50	79.00*T*	.....	88.00*T*	1.85	72.00	.....	72.00	14.75*o*	46.00

** F.o.b. warehouse. *a Semi thick. *b 30# bag. *c 3 layers of foil: $54.50. *d 40# kraft paper, 5 Msf, 100/500 rolls. *e 20# sq ft bag, 4" thick. *f Full trailer loads. *g 80# kraft paper backing 400 rolls or over. *h LCL. *i 40#. *j 80#. *k 2-in. *l 2". *m 8 to 10 ton quantities. *n Distributor's siding. *o Per Msf roll. *p 32# bag. *q 500 sf. *s 35# bag. *t 28# bag *u Flame proof $75. *v 5000 sf quantity. *w F.o.b. city. *x Sq. yd. *y 30# bag. *z Spun rock wool. *A 650 sf. *B ton. *C F.o.b. plant, freight allowed. *D CL. *E 10 Msf. *F less 2% disc, 10th. *G ½ of 1%, 10 days. *H 2% disc, 10 days. *J 1% disc, 10 days. *K less 2% for cash. *L 5% disc, 10th mo. *M fed. tax incl. *N 1% disc, 10 days. *O add 2% sales tax. *P 50 lb. bags, *Q add 4% sales tax. *R revised. *S 45 lb. *T less 2%, 30 days. *U lots of 2606 sq. ft. *V 250 sf roll.

MEXICO CITY WAGES & PRICES

WAGES, av per week, 8 hr day (pesos)a		Apr. '60
Common labor,	building (peons)	101.50
	heavy const (peons)	136.50
Skilled labor,	carpenters 1 cl	210.00
	bricklayers 1 cl	245.00
	struct. ironworkers	315.00

*a 6 days work-extra day's pay

MATERIALS PRICES, F.o.b. City (pesos)		Apr. '60
Struct. steel shapes, fob Monterey		
I-beams, 3 x 3 x 4"	per metric ton	2800.00
Reinf. steel, corrugated rods, per ton		
⅜"-½" x 11 meters consolidada		1950.00
¾"-1" x 11 meters		1850.00

		Apr. '60
Gravel, truckload, per cu meter		
Blue gravel		30.00
Cement, std. port. (Toltecas)	per metric ton	270.00
Lumber, 2" x 4" 1st class pine 20 ft.	per M sq. ft.	3500.00
2" x 4" 2nd class pine	per M sq. ft.	2600.00

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, MARIE MORAVSIK, ELAINE CHOMYAK, ELIZABETH WERRA, ELEANOR QUERET, Reports,
J. H. WEBBER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

▲ **MASSACHUSETTS** — BA 7/12 — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Attleboro and North Attleboro—section Int. Rte. 95.1-95-1(7)-4. $2,500,000. Plans deposit $30.
Falmouth—hy. and bridge, Rte. 28, F-191(8). $2,333,-300. Plans deposit $35. CD 1/8.
New Bedford—Chapter 90, hy. work, Church St. $300,-000. Plans deposit $10.
Norwood—hy. reconstr. Rte. 1, F-231(5). $370,000. Plans deposit $25.

BUILDINGS—BA

▲ **Conn., Hartford**—HIGH SCHOOL—BA 8/4—Town Purchasing Agent, 550 Main St., high school, $4,-500,000. Plans deposit $150. Malmfeldt Assocs., 36 Pearl St., Hartford, archts. A. John Macchi, 44 Gillette St., Hartford, consult. engr. CD 8/12/58.

HEAVY CONSTRUCTION—LB & CA

▲ **CONNECTICUT**—State Hy. Comrs., 170 Douglas St., Hartford, Bids opened 6/20,
A. J. Orlando Constr. Co., Inc., 151-59 Powells Cove Blvd., Whitestone, N. Y., LB **$3,812,779,** (10 bidders), bit. conc. pavement 17,400 lin. ft. relocating Rte. 72, 7 bridges, 3 rein.-con. box culverts from intersection Corbin and Farmington Aves. to Rte. 15, FAI Proj. FV 60(4). CD 6/1.

▲† **Five Boro Constr. Corp.,** 2 Lafayette St., New York, N. Y., LB **$1,869,000,** est. $1,867,500, imprv. building ways, Second Increment, Naval Shipyard, NBy 24927, Spec. No. 24927/59, PORTSMOUTH, N. H. Dist. P. Wks. Office, IND, 495 Summer St., Boston 10, Mass. Bids June 21. CD 5/20.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Bids opened 6/21,
Wes-Julian Constr. Corp., 850 Boston-Providence Hy., Dedham, Mass., LB **$1,083,003,** est. $1,236,509, section Int. Rte. 495.1-496-6(20)74, Andover. CD 6/17.

▲† **Green Manor Constr. Co., Inc.,** 380 West Middle Turnpike, Manchester, Conn., LB **$2,628,352,** est. $2,-929,500, rehabilitation Wherry Housing, Westover Air Force Base, IFB 19-617-60-63-380, CHICOPEE FALLS, MASS. Base Procurement Office, Officer in Charge Constr., Bldg. T-273, Westover Air Force Base, Chicopee Falls, Mass. Bids June 20. CD 6/15.

BUILDINGS—LB & CA

▲ **Walsh Brothers,** 150 Hampshire St., Cambridge, Mass., LB **$2,400,000** REGIONAL HIGH SCHOOL and CONVENT, ATTLEBORO, MASS. Roman Catholic Diocese of Fall River, 368 Main St., Fall River, Mass. Bids June 15. CD 5/31.

▲ **Louis Beckenstein,** 95 Haynes Rd., West Hartford, Conn., CA **$2,420,000,** 110 HOUSES, Sixth Section Laurel Park, Cadwell Rd., BLOOMFIELD, CONN. Green Acres, Inc., 139 Wintonbury Ave., Bloomfield, Conn. Awarded June 17. CD 12/12/55.

▲ **J. S. Nasin Co.,** N. Windham Rd., Willimantic, Conn., LB **$1,075,000,** (7 bidders), JUNIOR-SENIOR HIGH SCHOOL, COVENTRY, CONN. Town School Bldg. Comn., Town Hall, Coventry, Conn. Bids June 21. CD 6/14.

▲ **E & F Constr. Co.,** 94 Wells St., Bridgeport, Conn., CA **$1,000,000,** 47 unit brick veneer, block masonry MOTEL, swimming pool, Black Rock Turnpike, FAIRFIELD, CONN. Barry Bruce Corp., c/o Anderson & Petrofsky, archt., 177 State St., Bridgeport, Conn. Bids Apr. 22, awarded June 16. CD 3/29.

▲ **City of New Haven Parking Auth.,** City Hall, New Haven, Conn., cancelled bids to have been opened June 20, 7 story, 118x696 ft. GARAGE and 1 story RETAIL STORES, Church St. Redevelopment Proj. $4,000,000. NEW HAVEN, CONN. CD 5/26.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **N. Y., Idlewild**—SUPERSTRUCTURE, HOTEL ADDN. —BA 7/12—Port of New York Auth., 111 8th Ave., New York Zone 11, superstructure, International Hotel addn., Idlewild International Airport. Proj. 790,051. Total est. $3,000,000. CD 3/17.

BUILDINGS—BA

▲ **Pa., Worcester**—SCHOOL—BA 7/14—Lower Providence Worcester Joint School Auth., junior-senior high school, site preparation, disposal sys., athletic field, $2,750,000. Barney, Baywell, Armentrout & Divens, Girard Trust Bldg., Broad and Chestnut Sts., Phila., archts.

HEAVY CONSTRUCTION—LB & CA

▲† **Norair Engineering Corp.,** 1118 22nd St. N.W., Wash., D. C., LB **$5,781,000,** est. $5,795,070, (14 bidders), Items 1 and 2, Dale Carlia Filter and chemical bldgs., ENG-49-080-60-1(19), WASH., D. C. U. S. Eng., 1st and Douglas Sts. N.W., Wash., D. C. Bids June 16. CD 5/3.

▲ **Lane Constr. Co.,** 965 E. Main St., Meriden, Conn., LB **$11,695,000** (9 bidders) Contr. 465, Cannonsville dam, waste weir and weir, waste, and outlet channels and completion of release water works, etc. near Village of Deposit, Delaware Co., NEW YORK, N. Y. Bd. Water Supply, 13th Floor, 120 Wall St., New York, N. Y. Bids June 21. CD 5/23.

▲ **Horne Constr. Co., Inc.,** 225 W. 34 St., New York 1, N. Y., LB **$2,197,600,** (8 bidders), wharf constr., piers, Berths 52, 54, 56 and 58, Contr. EP-110.003, ELIZABETH, N. J. Port of New York Auth., Room 1100, 111 Eighth Ave., New York 11, N. Y., Bids June 21. CD 6/10.

▲ **Baylor Constr. Corp.,** 360 Lexington Ave., New York 17, N. Y., LB **$1,447,866** (3 bidders) sewage treatment plant and lift station, Inwood, MINEOLA, N. Y. Bd Suprvs. Nassau Co., Old County Court House, Mineola, N. Y. Bids June 21 CD 5/31.

Arnold M. Diamond, 115 Middle Neck Rd., Great Neck, N. Y., CA **$241,743** wharf, ST. GEORGE, N. Y. U. S. A. Third Coast Guard Dist., Custom House, Broadway, New York 4, N. Y. Bids May 27 CD 6/8 under LB.

BUILDINGS—LB & CA

▲ **Depot Constr. Corp.,** 42-15 Crescent St., Long Island City, N. Y., CA **$3,593,000** BLDG. No. 5, Dpt. of P. Wks., New York State Employees Retirement System, ALBANY, N. Y. State Dpt. P. Wks., State Office Bldg., Albany 1, N. Y. Bids May 18 Awarded June 17 CD 5/23 under LB.

▲ **Wm. E. Bouley Co., Inc.,** 265 Genesee St., Auburn, N. Y., CA **$1,818,000** WOMEN'S DORMITORY, ITHACA, N. Y. Cornell University, Ithaca, N. Y. Beardsley & Beardsley, 64 South St., Auburn, N. Y., archt.-engrs. Bids May 11 CD 4/28.

▲ **L. Simons & B. Kadin,** Pavilion Constr. Co., 30 Bay St., Staten Island 1, N. Y., Owner Builds, **$2,068,000** 6 story Skyline Terrace APARTMENT, St. Peter's Pl. between Carroll Pl. and Richmond Terrace, NEW BRIGHTON, N. Y.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $53,000; other public works $88,000; Industrial buildings $110,000; other buildings $400,000. Also Foreign projects of $1,000,000 and more in size of Interest to American contractors.

By Regions & Classes of Construction
(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED
New England — **Middle West**
Middle Atlantic — **West of Mississippi**
South — **Far West**
PROPOSED WORK
Water Supply — **Public Buildings**
Sewers, Waste Disposal — **Mass Housing**
Bridges — **Commercial Buildings**
Streets & Roads — **Industrial Buildings**
Earthwork, Waterways — **Unclassified**

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily Issue in which last previous report was published.
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily
For additional reports see Construction Daily.

▲ **Joseph P. Blitz, Inc.,** 545 Madison Ave., New York 22, N. Y., LB **$6,959,000** (9 bidders) general contract Andrew Jackson HOUSES, Proj. No. NY5-43, 868 units, Bronx Boro, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. Bids June 21 CD 4/28.

▲ **Mars Assoc., Inc.,** 271 Church St., New York 13, N. Y., LB **$4,707,000,** (5 bidders), combination general contract Proj. E-818 P.S. 288, Surf Ave. and W. 25th and W. 27th Sts., Brooklyn Boro; Proj. E-463 P.S. 232, 83rd and 84th Sts., 153rd and 155th Aves., Queens Boro, South Ozone Park; Proj. E-462, P.S. 183, Beach Channel Dr. and Beach 80th and 81st Sts., Queens Boro, Rockaway Beach, NEW YORK. Supt. of Design, Constr. & Physical Plant, Bureau of Constr., 4th Fl., 42-15 Crescent St., Long Island City 1, N. Y. Bids June 16. CD 5/25;
D. J. Rice, Inc., 4150 38th St., Long Island City 1, N. Y., LB **$703,050,** heating and ventilating for Schools Nos. 288, 232 and 183, Brooklyn, South Ozone Park and Rockaway Beach (New York);
Heckler Elec. Co., Inc., 10-29 44th Rd., Long Island City 1, N. Y., LB **$602,600,** (3 bidders), electrical work Schools Nos. 288, 232 and 183, Brooklyn, South Ozone Park and Rockaway Beach (New York).

▲ **Caristo Constr. Corp.,** 26 Court St., Brooklyn 1, N. Y., LB **$1,590,000,** (6 bidders), general contract Proj. E. 818, P.S. 288, Surf Ave. and W. 25th and W. 27th Sts., Brooklyn Boro, BROOKLYN, N. Y. Bids une 16. CD 5/25.

▲ **Caristo Constr. Corp.,** 26 Court St., Brooklyn 1, N. Y., LB **$1,610,000,** (6 bidders), general contract Proj. E-462, P.S. 183, Beach Channel Dr. and Beach 80th and 81st Sts., Queens Boro, ROCKAWAY BEACH, N. Y. Bids June 16. CD 5/25.

▲ **Wilaka Constr. Co., Inc.,** 11 E. 44th St., New York 17, N. Y., LB **$1,605,000,** (5 bidders), general contract Proj. E-463, P.S. 232, 83rd and 84th Sts., 153rd and 155th Aves., Queens Boro, SOUTH OZONE PARK, N. Y. Bids June 16. CD 5/25.

▲ **Mid-City Realty Corp.,** 420 Lexington Ave., New York 17, N. Y., Owner Builds, **$7,000,000,** 32 story, 300,000 sq. ft. OFFICE, SE corner Madison Ave., E. 56th St. at 555 Madison Ave., NEW YORK, N. Y. Lapidus, Kornblath, Harle & Liebman, 139 E. 56th St., New York 22, N. Y., archts. John Kokkins, c/o owner assoc. archt.

▲ **Diesel Constr. Co.,** 24 W. 58th St., New York 19, N. Y., CA est. **$25,000,000,** 21 story HOTEL, East 51st St. and Lexington Ave., NEW YORK, N. Y. Loew's Theatres, Inc., 1540 Broadway, New York, N. Y. Morris Lapidus, Kornblath, Harle & Liebman, 139 E. 56th St., New York 22, N. Y., archts. CD 4/6.

▲ **Starrett Bros. & Eken Inc.,** 225 Broadway, New York 7, N. Y., LB Est. **$2,000,000** (8 bidders) INSTITUTE FOR THE HANDICAPPED, NEW YORK, N. Y. The Institute of Crippled & Disabled, 400 1st Ave., New York, N. Y. Bids June 20. CD 6/16.

▲ **Praver Assocs.,** 163-18 Jamaica Ave., Jamaica 32, N. Y., Owner Builds, **$2,415,000** (6th Section) CO-OPERATIVE APARTMENT Sherwood Village, REGO PARK, N. Y. Samuel Paul, 89-51 164th St., Jamaica, N. Y., archt.

▲ **Cresco Builders, Inc.,** 6219 Cress Blvd., Pennsauken, N. J., CA **$1,305,000,** est. $1,882,237, senior high SCHOOL, MOORESTOWN, N. J. Bd. Educ., Moorestown, N. J. Bids May 26. CD 6/14, under LB.

▲ **Arthur Venneri Co.,** 300 North Ave., Westfield, N. J., CA **$2,196,900,** est. $3,000,000, 9 story APARTMENT, Cortland and Chapman Aves., PERTH AMBOY, N. J., Housing Auth. of City of Perth Amboy, 881 Amboy Ave., Perth Amboy, N. J. Bids May 12. CD 5/24, under LB.

▲ **Walter Kidde Constructors,** 140 Cedar St., New York 6, N. Y., CA **$2,443,000,** 3 story HOSPITAL ADDN., PLAINFIELD, N. J., Muhlenberg Hospital, Park Ave., Plainfield, N. J. Bids May 26. Awarded June 17. CD 6/1, under LB.

▲ **Mason-McDowell Corp.,** 8902 West Chester Pike, Upper Darby, Pa., Separate Contract, **$3,000,000,** RESIDENTIAL DEVELOPMENT (270), Mayer Rd., etc., LANSDALE, PA.

▲ **E. C. Machin Inc.,** 1024 N. Quebec St., Allentown, Pa., CA **$1,000,000,** CEMENT PLANT, STOCKERTOWN, PA., Hercules Cement Co., 1530 Chestnut St. Phila., Pa., and Stockertown, Pa. CD 5/26.

▲† **Blake Constr. Co.,** 33 E. Street, S. W., Wash., D. C., CA **$5,638,000** replacement HOSPITAL FACILITIES, U. S. Naval Hospital, National Naval Medical Center. NBy-25008, BETHESDA, MD. Area P. Wks. Office, Chesapeake, U. S. Naval Weapons Plant, Wash. 25, D. C. Bids June 10. CD 6/14 under LB.

Robin Constr. Co., 1433 Northgate Rd., Wash., D. C., Owner Builds, **$750,000,** 8 story APARTMENT, 7923 Eastern Ave., SILVER SPRING, MD. John d'Epagnier, 1004 Ripley St., Silver Spring, Md., archt.

▲† **Standard Constr. Co.**, 1010 Vermont Ave. NW, Wash., D. C., LB $3,996,000 (15 bidders) DOMICILIARY C, U.S. Soldiers Home, WASH., D. C. U. S. Eng., 1st and Douglas Sts., Wash., D. C. Hayes, Seay, Mattern & Mattern, 1707 H St. NW, Wash., D. C., archts. Bids June 21. CD 5/19.

▲† **Humphreys & Harding**, 1608 New Hampshire Ave. NW, Wash., D. C., LB $1,119,815 (11 bidders) high level RADIATION LABORATORY, Bldg. 71, Naval Research Laboratory, WASH., D. C. Area P. Wks. Office, Chesapeake, U. S. Naval Weapons Plant, Wash., D. C., Bids June 22. CD 6/3.

SOUTH

BUILDINGS—BA

▲ **Ill., Ottawa**—SCHOOL—BA 7/15—Bd. Educ., Dist. 140, Ottawa Twp. High School addns., alterations, $1,000,000. Louis H. Gerding, Central Life Bldg., archt. CD 11/27.

▲† **Louisiana**—BA 7/20—U. S. Eng., P.O. Box 267, New Orleans, hydraulic dredging 14,112,000 cu. yd. material Atchafalaya River main channel, Iberia and St. Martin Parishes, CIVENG 16-047-60-231. $2,500,000. Plans deposit $1. CD 9/29/59.

Ala., Dothan—COURT HOUSE—BA 7/26—Houston Co. Bd. Revenue, Court House, 4 story court house, $800,000. Joseph L. Donofro, Dothan, archt. CD 12/9/59.

HEAVY CONSTRUCTION—LB & CA

▲ **Noonan Constr. Co.**, P. O. Drawer 470, Pensacola, Fla., LB $1,572,757, runway and aircraft parking apron paving, Whiting Field, NBy 25387, MILTON, FLA. P. Wks. Office, 6th Naval Dist., Charleston, S. C. Bids June 9. CD 5/13.

▲ **Harbert Constr. Corp.**, P. O. Box 1369, Birmingham, Ala., CA $6,651,900, earthdam, spillway, Pearl River Valley Dam near here, JACKSON, MISS. Pearl River Water Supply Dist., P. O. Box 1085, Jackson, Miss. Bids May 12. Awarded June 13. CD 5/17, under LB.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort, Bids opened 6/17,

Ky.—**R. B. Tyler Co.**, 1446 Levering St., Louisville, Ky., LB $494,986 (4 bidders) b. conc. Class I 0.415 mi. Inner Belt Rd. I 264 (12) 20 SP 56-628, Jefferson Co.;

Ky.—Wood & Bush Co., 410 Ann St., Frankfort, Ky., LB $2,625,825 (9 bidders) high type surf. 0.321 mi. Lexington-Covington. I 75-6 (5) 123, S 291 (2) S 370 (2), Scott Co.; LB $1,147,247 (11 bidders) grade, drain 3.863 mi. Covington-Tenn. State Line. I 75-6 (4) 129, Scott Co.;

Ky.—Winston Ford Co., Prestonsburg, Ky., LB $197,531, (8 bidders) traffic bound surf. 4.496 mi. Caney Creek Rd. RS 60-258, Knott Co. CD 5/26.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort,

Mattingly Bridge Co. and Charles R. Allen, 317 Wallace Ave., Louisville, Ky., CA $1,094,472, grade, drain, b. conc. 0.716 mi. Watterson-Expressway I 224-1 (7) 20 SP 56-58, Jefferson Co. Bids June 2. Awarded June 15. CD 6/7, under LB.

▲† **Sam Nally**, Bardstown, Ky., LB $1,147,260 (7 bidders), bit. surf. treatment and related work various roads, Mammoth Cave National Park, Proj. 1B2, 5A1, 7A1, 9A1, 10A1, 18A1, KENTUCKY. Bureau P. Rds., Dpt. Commerce, Park Headquarters, Mammoth Cave National Park, Mammoth Cave, Ky. Bids June 21. CD 5/31.

▲ **LOUISIANA**—State Hy. Dpt., Rm. 426, Headquarters Admin. Bldg., Baton Rouge,

F. Miller & Sons, Inc., Box 1210, Lake Charles, La., CA $1,427,993, concrete piers, fender sys. Lake Charles By-pass River Bridge, Rte. 1-210, 0.17 mi. SP 450-20-02, Fed. 1-210-1 (35) 27, Calcasieu Parish. Bids Apr. 20. Awarded May 18. CD 4/25 under LB.

BUILDINGS—LB & CA

▲ **Chesterfield Bldg. & Development Corp.**, Rte. 10, Richmond, Va., CA $1,360,000, APARTMENTS, CHESTER, VA., William M. Benton, Rte. 10, Richmond, Va. CD 6/16.

▲† **Virginia Engineering Co.**, 80 29 St., Newport News, Va., CA $2,047,000, U. S. ARMY HOSPITAL and mechanical equipment bldg., ENG-44-110-60-20. FORT EUSTIS, VA., U. S. Eng., Foot of Front St., Norfolk 1, Va., Bids June 1. Awarded June 20. CD 6/20, under LB.

▲ **John W. Daniel Co.**, 3232 Riverside Dr., Danville, Va., LB $1,865,000, Shrine Hill High SCHOOL, ROANOKE, VA. City School Bdg., 217 Church Ave. S.W., Roanoke, Va. Bids June 9. CD 6/1.

▲† **Blount Bros. Constr. Co.**, 79 Commerce St., Montgomery, Ala., CA $2,957,000 extension, POST OFFICE, PARKERSBURG, W. Va. General Services Admin., Public Bldgs. Service, Rm. 7122, Regional Office Bldg. 7 and D Sts. S.W., Wash. 25, D. C. Bids May 18. CD 5/23, under LB.

▲ **Harper Builders Supply, Inc.**, P.O. Box 461, Williamston, S. C., LB $1,201,273, GIRLS' HIGH SCHOOL, ANDERSON, S. C. Anderson School Dist. 5, S. Fant St., Anderson, S. C. Bids June 14. CD 5/26.

▲ **A. C. Samford, Inc.**, P. O. Box 1229, Albany, Ga., LB $1,279,344, 150 low rent HOUSING UNITS, UNION, S. C. Union Housing Auth., City Hall, Union, S. C. Bids June 16. CD 6/7.

▲ **The Jordan Co.**, P.O. Box 1179, Columbus, Ga., LB $1,709,000, Proposal A; LB $1,666,000, Proposal B, 200 HOUSING UNITS, PHENIX CITY, ALA. Phenix City Housing Auth., 200 16 St., Phenix City, Ala. Bids June 7. CD 6/1.

▲ **Daniel Constr. Co., of Alabama**, 822 7th Ave. S., Birmingham, Ala., CA $2,500,000, auto and industrial parts, MFG. PLANT, DECATUR, ALA. Electric Auto-Lite Co., Champlain and Chestnut Sts., Toledo, O. CD 6/20.

▲ **A. R. Briggs Constr. Co.**, P.O. Box 1124, Macon, Ga., CA est. $2,500,000, 230,000 sq. ft. Westgate SHOPPING CENTER, MACON, GA. Fickling & Walker, 240 2nd Ave., Macon, Ga. CD 1/19.

▲ **C-K Constr. Co.**, Skokie, Ill., LB $1,195,000 (4 bidders) ENTOMOLOGY RESEARCH LABORATORY, Mississippi State College, STATE COLLEGE, MISS. General Services Admin., 50 Seventh St. N. E., Atlanta 23, Ga. Thomas Shelton Jones & Assoc., Starkville, Miss., archts. Bids June 21. CD 5/27.

▲ **Thompson & Street Co.**, P.O. Box 1847, Charlotte, N. C., LB $1,963,000, 192 HOUSING UNITS, S. Market St., CHATTANOOGA, TENN. Chattanooga Housing Auth., 1914 McCallie Ave., Chattanooga, Tenn. Bids May 28. CD 5/5.

MIDDLE WEST

BUILDINGS—BA

▲ **Ind., Valparaiso** — HOSPITAL ADDN. — BA 7/7 — Porter County, County Bldg., 85-bed Porter County Memorial Hospital addn. Extended date. $1,440,000. Schmidt Garden & Erickson, 104 S. Michigan Ave., Chicago 3, Ill., archts. CD 4/13.

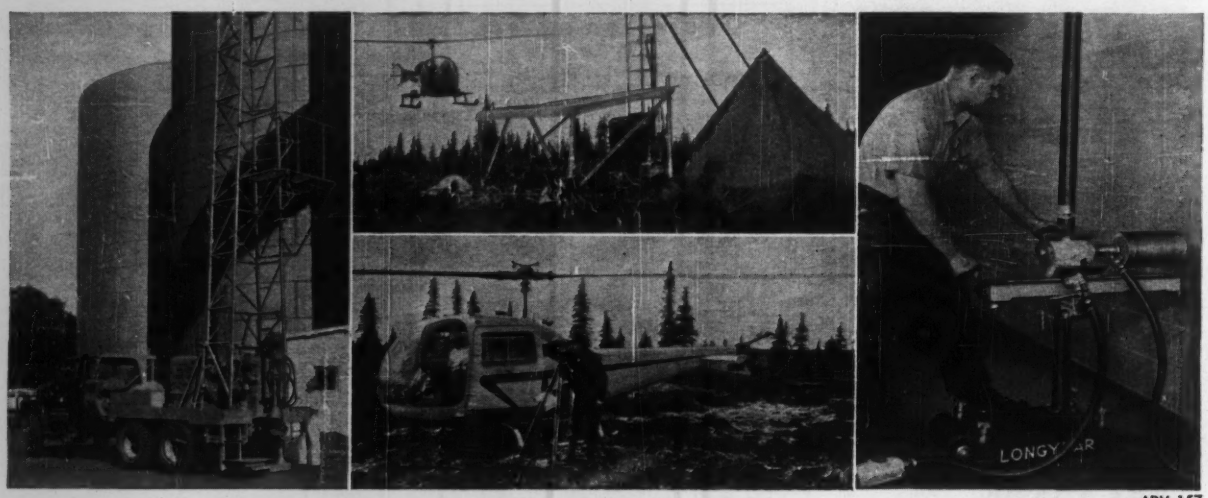
O., Steubenville — SCHOOL — BA 7/7 — Stanton Local School Dist., elementary school, $498,000. Robert Beay, East Liverpool, archt. CD 6/12/59.

▲ **O., Kent**—DORMITORIES—BA 7/13—Dpt. P. Wks., State Dept. Bldg., Columbus, Zone 15, Charles H. Lake and David Olsen Halls, mens dormitories, Kent State University, $2,500,000. Plans deposit $50. Fulton, Dela Motte, Larson, Nassau & Assocs., 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 12/18/58.

▲ **Mich., Saginaw** — HOSPITAL — BA 7/21—Saginaw General Hospital, 1447 N. Harrison St., 110-bed hospital. $2,000,000. Schmidt Garden & Erickson, 104 S. Michigan Ave., Chicago 3, Ill., archts.

HEAVY CONSTRUCTION—LB & CA

▲ **Complete General Constr. Co.**, 1221 E. 5th Ave., Columbus, O., CA $1,063,868 48 in. Stelzer Rd. water main from Hoover Reservoir, Morse Rd. to 7th Ave. COLUMBUS, O. City, City Hall, Columbus, O. Bids June 7. CD 6/16 under LB.



ADV 157

Longyear

WORLD WIDE SERVICES: *Contract Drilling*—Foundation testing . . . test boring by experienced drill crews with modern equipment . . . Grout hole drilling . . . *Consulting*—Air Photo Interpretation (site planning, road planning, location of aggregates) . . . Investigation and valuation of sand and gravel deposits . . . Consultation on underground storage sites.

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▲ **Square & Marra Constr. Co.,** 4990 Massachusetts Ave., Indianapolis, Ind., CA **$1,900,140,** est. $2,500,000, Section 3, Auxiliary Mill Creek Interceptor Sewer, CINCINNATI, O. City, City Hall, Cincinnati, O. Bids June 14. CD 6/7.

† **Patton-Tully Transportation Co.,** P.O. Box 26, Memphis 1, Tenn., LB **$662,700,** est. $720,657 (5 bidders), timber piling clump dikes, stone fill dikes, Mississippi River, Miles 69 and 75 above the mouth of the Ohio River, Cape Girardeau Co., Mo., and Union Co., Ill., CIVENG 23-065-60-45, MISSOURI AND ILLINOIS. U. S. Eng., 420 Locust St., St. Louis 2, Mo. Bid June 16. CD 5/11.

▲ **INDIANA**—State Hy. Dpt., State House Annex, Indianapolis,
Ind.—**Dyer Constr. Co.,** 1716 Sheffield St., Dyer, Ind., CA **$801,643,** Bridge Contr. 4905, Lake Co.
Ind.—**The Panker Constr. Co.,** 1030 Summer St., Cincinnati 4, O., CA **$948,005,** Bridge Contr. 4863, Benton Co. Bids Mar. 31. Awarded June 1960. CD 4/6 under LB.

INDIANA—State Hy. Dpt., State House Annex, Indianapolis,
Rieth-Riley Constr. Co., 311 W. Madison St., Goshen, Ind., CA **$846,274,** rein.-conc. pavement concrete base widn., bit. resurf. 7.26 mi. SR 9, Fort Wayne, Contr. R-4927, LaGrange Co. Bids Mar. 31. CD 4/6 under LB.

▲ **Commercial Light Co.,** 215 S. Morgan St., Chicago, Ill., LB **$3,622,374** (4 bidders), No. 80.64-60-2, Item A, street lighting incl. 12,750 lights, 112,000 ft. 2 in. laterals, 245,000 ft. sheatbed cable, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, Ill. Bids June 17. CD 6/2.
Meade Electric Co., Inc., 5401 Harrison St., Chicago 44, Ill., CD **$145,465** (4 bidders), Item B, No. 80.64-60-2, street lighting incl. 4,985 light posts (Chicago, Ill.).

▲† **Base Procurement Office,** Scott Air Force Base, Ill., rejected bids opened Mar. 28, modifying WHERRY HOUSING, IFB 11-623-60-29B, LB **$3,227,268,** SCOTT AIR FORCE BASE, ILL. CD 4/5, under LB.

▲ **MICHIGAN** — State Hy. Dpt., 732 Mason Bldg., Lansing,
Mich.—**S. J. Groves & Sons,** 3700 Carpenter Rd., Ann Arbor, Mich., CA **$2,050,510,** 3.1 mi. northbound lane US 23 expressway, incl. 3 structures from Ann Arbor R.R. tracks north to Nilan, Monroe Co.;
Mich.—**Cooke Contracting Co.,** 1116 Penobscot Bldg., Detroit 26, Mich., CA **$1,072,425,** 1.6 mi. US 23 expressway (Saginaw Eastbelt) from Janes Rd. north to M-81, incl. 3 structures, Saginaw Co.;
Mich.—**Hertel Deyo Co.,** 5205 S. Division Ave. S., Grand Rapids, Mich. and **C. E. Utterbeck,** Mt. Pleasant, Mich., CA **$2,025,353,** 6.7 mi. US 27 expressway and 2 structures from Blanchard Rd. north to Deerfield Rd. south, Mt. Pleasant, Isabella Co. Bids Apr. 6. Grand total $5,148,288. CD 4/12, under LB.

▲ **Farden City Eng. Co.,** 1714 S. Halsted St., Chicago, Ill., LB **$1,405,310** (4 bidders) electric work, wet air oxydization unit, Stickney, West Southwest Sewage treatment plant, CHICAGO, ILL. Metropolitan Sanitary Dist. of Chicago, 100 E. Erie St., Chicago, Ill. Bids June 16. CD 6/2.

▲ **Siesel Constr. Co.,** 514 E. Ogden Ave., Milwaukee, Wis., CA **$2,215,000,** Howard Ave. purification plant, MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids May 26, awarded June 2. CD 6/1, under LB.

△ **Fattore Co., Inc.,** Centerline, Mich., CA **$2,946,822,** main sewer in S. Pennsylvania Ave., Oak Creek, MILWAUKEE, WIS., Metropolitan Sewerage Comm. of the Co. of Milwaukee, P. O. Box 2079, Milwaukee 1, Wis., Bids May 24. CD 6/1 under LB.

BUILDINGS—LB & CA

▲ **Edward and Herbert Kroeger,** 6521 Daly Rd., Cincinnati, O., Own Forces, **$2,750,000,** 155 HOMES, Hollywood Ave. extension, CINCINNATI, O. Bonfield & Sanalone, 5661 Glenway Ave., Cincinnati, O., engrs.

▲ **John Hemmer Constr. Co.,** 1020 Prospect St., Covington, Ky., LB **$2,058,444,** est. $2,390,000 (5 bidders), Aiken Senior High SCHOOL, CINCINNATI, O. Bd. Educ., 608 E. McMillan St., Cincinnati, O. Bids June 15. CD 5/18.

▲ **Hamilton Co.,** 1720 Section Rd., Cincinnati, O., CA **$3,191,900,** HOUSING, Winton Terrace, CINCINNATI, O. Metropolitan Housing Auth., 595 Armory St., Cincinnati, O. Bids May 17, awarded June 21. CD 5/23, under LB.

▲ **Grant-Holladay Constr. Co.,** Commercial Bldg., Dayton, O., Owner builds **$4,000,000,** 200 HOMES, Charring Cross Meadows, N. River Rd., MUNROE FALLS, O.

▲ **Discount Builders Inc.,** 12067 Pleasant Valley Rd., Parma, O., Owner builds, **$6,000,000,** 300 HOMES, W. 119th St. and Gross Dr., Pleasant Valley Rd. PARMA, O.

▲† **T. J. Hume Constr. Co.,** 435 Hamilton Ave., Lorain, O. LB **$232,943** (3 bidders) TEST STAND for altitude rocket test facility, Plum Brook Facilities, Proj. C 1105PB SANDUSKY, O. National Aeronautics & Space Admin., Lewis Research Center, 21000 Brookpark Rd., Cleveland 35, O. Bids June 8. CD 5/24.

▲ **David W. Murray Co.,** 5475 Eagle St., Cleveland, O., CA est. over **$5,000,000.** electrolytic tinning line and galvanizing and annealing line MILL, CHESTERTON, IND. Mid-West Steel Co., div. National Steel Corp., Grant Bldg., Pittsburgh, Pa. CD 3/12/59.

▲ **Trans-American Constr. Co.,** 5252 Sheridan Rd., Chicago, Ill., Owner Builds, **$6,000,000,** 2 story, Riviera MOTEL, swimming pool, 110 St. and Indianapolis Blvd., HAMMOND, IND. Awarded June 7.

▲ **Glazer & Marotta,** 20515 Shaker Blvd., Cleveland 22, O., CA **$2,000,000,** SHOPPING CENTER, Brecksville Rd., INDEPENDENCE, O. Independence Square Shopping Center Inc., 20515 Shaker Blvd., Cleveland 22, O. CD 4/15 under LB.

▲ **Jennings & Churella, Inc.,** New London, O. CA 460 ft. long FACTORY to house welded tube mill SHELBY, O. Seamless Tube Div. Copperweld Steel Co., Shelby, O. Osborn Engineering Co., 7016 Euclid Ave., Cleveland, O., engr.

▲ **General Electric Co.,** 1 River Rd., Schenectady, N. Y., CA est. **$2,000,000,** transformer, 35 electric motors, 50 circuit breakers, generator control panel, protection devices, for third generator, Bay Shore POWER STATIONS, TOLEDO, O. Toledo Edison Co., Edison Bldg., Toledo, O. CD 4/14.

▲ **Miller Davis Co.,** 4300 North Ave., Melrose Park, Ill., LB **$1,049,514,** APARTMENTS, Plum Landing Home, AURORA, ILL. The Mighell Fund, Inc., 495 N. Lake St., Aurora, Ill. Bids June 3. CD 5/26.

Fred Berglund & Son, Inc., 8410 S. Chicago Ave., Chicago, Ill., LB **$832,360,** 1 and 2 story, 60,000 sq. ft. MAYO SCHOOL, 37th St. and Prairie Ave., CHICAGO, ILL. Bd. Educ., 228 N. LaSalle St., Chicago, Ill. Bids June 13. CD 5/26.

▲ **F & S Constr. Co.,** Box 188, Roselle, Ill. Owner builds **$16,000,000,** 675 HOMES subdivision development, north of Butterfield Rd., ½ mi. east Rte. 53 LOMBARD, ILL. Friedstein & Fitch, 228 N. LaSalle St., Chicago, Ill., archt. Webster Engineering, 1072 College St., Wheaton, Ill., engrs.

▲ **Bulley & Andrews,** 1755 W. Armitage Ave., Chicago, Ill., CA **$1,000,000,** 1 story, 210,000 sq. ft. steel FACTORY, Linder and Touhy Aves., SKOKIE, ILL. W. N. Welsh Mfg. Co., 1515 Sedgwick St., Chicago, Ill. Battey & Childs, 231 S. LaSalle St., Chicago 4, Ill., archts. Awarded June 17. CD 3/1/55.

▲ **Oliver Constr. Co.,** Hy. 16, Oconomowoc, Wis., CA **$1,237,300.** HIGH SCHOOL, NEW BERLIN, WIS. Union High School Dist. No. 5, New Berlin, Wis. Bids May 24. CD 6/1, under LB.

▲ **Jezo Constr. Co.,** 1409 S. 74 St., West Alis, Wis., CA **$1,696,000.** childrens COURT CENTER, WAUWATOSA, WIS. Milwaukee Co., Court House, Wauwatosa, Wis. Bids May 18. CD 5/24, under LB.

▲ **E. J. Etkin Constr. Co.,** 1011 Capital Ave., Oak Park, Mich., CA **$1,156,000** Proj. Mich. 27-2, 100 unit HOUSING, INKSTER, MICH. Inkster Housing Comn., 30005 Pine St., Inkster, Mich. Bids May 25. CD 6/2. Awarded June 15. under LB.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

Minn., Arden Hills (P. O. St. Paul 12)—BA 7/14—Village, 1450 West Hy. 96, 40,000 lin. ft. 8 to 18 in. sanitary sewers; 3,800 lin. ft. 6 and 10 in. c.i. force main; 3 sewage pumping stations, $500,000. Plans deposit $40. Banister Engineering Co., 310 N. Snelling Ave., St. Paul, Minn., engr.

Minn., Owatonna—BA 7/15—City, City Hall, waste treatment plant addn. $200,000. Plans deposit $5C R. J. Ellison, 2066 Bayard Ave., St. Paul 16, Minn., engrs. CD 11/26/59.

Tex., Grapevine—BA 7/20—City, City Hall, Contr. 2, 1 m.g. water treatment plant, Contr. 3, water supply lines; Contr. 4, pumping unit for water treatment facilities, $350,000. Plans deposit $25. Freese, Nichols & Endress, 407 Danciger Bldg., Ft. Worth, engrs. CD 6/15/59.

Tex., Grapevine—BA 7/20—City, City Hall, Contr. 5, sanitary sewer collections sys. $70,000. Plans deposit $25. Freese, Nichols & Endress, 407 Danciger Bldg., Ft. Worth, engrs. CD 10/16/58.

BUILDINGS—BA

▲ **Ark., Osceola**—DWELLINGS—BA 7/5—Housing Auth., 150 units brick, concrete dwellings, Ark-21-1, $1,500,000. Plans deposit $50. Stanley Brown, 4012 Cedar Springs Rd., Dallas, Tex., archt. CD 10/16/58.

Okla., Oklahoma City—BUILDING—BA 7/7—Dpt. Hys., Capitol Office, 50 x 100 x 10 ft. rigid frame steel building, E. 21st St., Oklahoma Co., SAP B 903 (4).

▲ **Kan., Kansas City**—WAHL HALL—BA 7/12—Dir. Purchases, Dpt. Admin., State Office Bldg., Rm. 173-N, Topeka, Kan., 6 story, L-shaped, 163x232 ft. Wahl Hall addn., University of Kansas Medical Center. $1,850,000. Ekdahl, Davis & DePew, N.E. Bldg., Topeka, Kan., archts. CD 4/16/59.

▲ **Kan., Wichita**—ACADEMY—BA 7/15—Catholic Diocese of Wichita, c/o Feagins, Kirsch & Feagins, archts., 301 Laura Ave., Wichita, Kan., 2 story, part bsmt., 82,000 sq. ft. brick, concrete, steel Mt. Carmel Academy for Girls, Rock Rd. and Central Ave. $1,150,000. CD 6/17.

▲ **Tex., Dallas**—SHOPPING CENTER—Bids Asked—Webb Royal Center, 4301 Lakeside Dr., Dallas, shopping center, $1,600,000; site earthwork, **$70,000;** lighted area and auto parking center pavement, **$106,000;** water system, **$55,000.** Webbs Chapel Rd. at Royal Lane. Williams & Reeves, 4301 Lakeside Dr., Dallas, engr.-archts. CD 6/16.

▲ **Tex., Houston**—BREWERY—Bids Asked—Anheuser-Busch Inc., 721 Pestalozi St., St. Louis, Mo., brewery, $25,000,000-$31,500,000; supply storage, $150,000; maintenance shop, $200,000; hard pavement, brewery area, auto center $175,000; water system, $75,000 outside lighting system, $95,000; earthwork, grading, drainage, 60 acre area, $80,000. CD 2/5.

HEAVY CONSTRUCTION—LB & CA

▲ **Harbert Constr. Corp.,** 2208 8th Ave. S., Birmingham, Ala., CA **$2,740,000** laying gas pipe lines in area St. Cloud, Sartell, Sauk Rapids, Wait Park, Winona and Goodview, Minn. and LaCrosse, French Island, Onalaska and Shelby, Wis., MINNESOTA and WISCONSIN. Northern States Power Co., 15 S. Fifth St., Minneapolis, Minn. CD 1/12,
Northern States Power Co., 15 S. Fifth St., Minneapolis, Minn., Owner's Forces, **$100,000** providing natural gas service through connection with feeder line, East Grand Forks, (Minnesota).

▲ **Northern States Power Co.,** 15 S. Fifth St., Minneapolis Minn., Owner's Forces **$283,000** install transformer, West Faribault Substation (1961 completion, Faribault; **$320,000** rebuild 18.5 mi. 69,000 volt transmission line between Waterville and owner's generating Station, at Mankato, Minn. 1961 Proj. **$403,000** double capacity Champlin Substation, Anoka and Area SE and increasing transformer and feeder capacity of substation, Champlin, MINNESOTA. Grand total $1,006,000. CD 1/12.

▲† **Hoosier Engineering Co.,** 1350 Holly Ave., Columbus 12, O., CA **$1,405,097** fdns., steel towers for 57 mi. Oahe-Fort Thompson 230-kv transmission line, Missouri River Basin Project, Hughes, Hyde and Buffalo Counties. Spec. DC 5275, SOUTH DAKOTA. Bureau Reclamation, Dpt. Interior, Huron, S. D. Bids May 26. Awarded June 13. CD 6/6 under LB.

▲ **SOUTH DAKOTA**—State Hy. Dpt., Pierre,
Art Schimat Constr. Co., 124 Washington St., Pierre, S. D., and **Pasco Constr. Co.,** 907 S. Minn. St., Sioux Falls, Minn., CA **$1,764,137,** est. $2,000,000, grading 18.628 mi. I-90, Pennington Co. Bids Apr. 7. Awarded June 18. CD 4/12, under LB.

SOUTH DAKOTA—State Hy. Dpt., Pierre,
Highway Constr. Co., 613 9th St., Rapid City, S.D., CA **$516,861,** est. $555,000, structures, group 1 & 2, I-90 (190-2(8)77, Pennington Co. Awarded June 18. CD 3/9.

▲† **Millstone Constr. Co., Inc.,** 8510 Eager Rd, Brentwood 17, Mo., CA **$1,448,474,** alterations Prairie and Ferry Sewer Sys. Proj. Items S-5 and S-06, Flood Protection, St. Louis. CIVENG-23-065-60-46. MISSOURI. U. S. Eng., 420 Locust St., St. Louis 2, Mo. Bids June 1. CD 6/6, under LB.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol, Oklahoma City,
Clark Constr. Co., Woodward, Okla., CA **$829,194,** grading, draining, 6.56 mi. I-40 west of junction of US 66 and US 270 near Gary, Canadian Co.
Okla.—**Frix & Foster,** 1200 S. Cherokee St., Muskogee, Okla., CA **$863,410,** grading, draining 7.677 mi. I 40, Harrah, Oklahoma Co. Bids Apr. 22. Awarded June 6. CD 4/28, under LB.

† **Strickland Constr. Co.,** 2208 E. Admiral Blvd., Tulsa, Okla., LB **$156,834,** est. $126,995, slide repairs, relocating Frisco Ry. Co., Keystone Reservoir, Tulsa Co., OKLAHOMA. U. S. Eng., Box 61, Tulsa, Okla. CD 9/29.

Superior Constr. Co., Box 2212, Lawton, Okla., CA **$176,595,** est. $192,175, concrete pavement, Street Improvement Dist., No. 102 LAWTON, OKLA. City, City Hall, Lawton, Okla. CD 5/5.

Graham Constr. Co., Box 141, Cameron, Tex., CA **$788,460,** sewage disposal plant, LAWTON, OKLA. City, City Hall, Lawton, Okla. Bids Mar. 29. CD 4/8, under LB.

† **Broderick & Gibbons, Inc.,** 6th St. E. and Santa Fe Trail, Pueblo, Colo., LB **$193,617,** est. $199,680, (4 bidders), asphalt roads, drainage repairs, No. 05-001-60-44, PUEBLO, COLO. U. S. Eng., Bldg. 4, Pueblo Ordnance Depot, Avondale, Pueblo, Colo. Bids June 16. CD 9/21/51, under Public Buildings.

▲ **Standard Industries Inc.,** Mayo Bldg., Tulsa, Okla. LB **$2,497,985,** aircraft parking apron, roadway at airport terminal, TULSA, OKLA. Tulsa Airport Trust, City Hall, Tulsa, Okla. CD 8/23/57.

▲† **Macco Corp.** and **Raymond International Inc.,** 14409 Paramount St., Paramount, Calif., **Kaiser Engineers Div. Henry J. Kaiser Co.,** 1924 Broadway, Oakland, Calif. and **Puget Sound Bridge & Drydock Co.,** 2929 16 St. S. W., Seattle, Wash., CA **$22,115,828,** Atlas Missile Complexes, Walker Air Force Base, ENG 29-005-60-92. ROSWELL, N. M. U. S. Eng., P. O. Box 1583, Albuquerque, N. M. Bids June 15. CD 6/20, under LB.

BUILDINGS—LB & CA

▲ **Barrett Builders,** Foshay Tower, Minneapolis, Minn., CA **$1,000,000,** SHOPPING CENTER, Ilex and Cherry Aves., ST. PAUL, MINN. Applebaum Food Market, 2225 University Ave., St. Paul, Minn.

▲ **A. E. Benicke,** Rochester, Minn., LB **$1,049,600,** HOSPITAL addn. to Nurses Home, WABASHA, MINN. St. Elizabeth Hospital, Wabasha, Minn. Bids June 1. CD 5/18.

Constant Constr. Co., Box 126, Lawrence, Kan., CA est. over **$500,000,** 2 story 210 x 403 ft. rein.-con. steel, etc. PLANT addn., Kansas Turnpike Access Rd., LAWRENCE, KAN. Multi-Art, Inc., 25th and McGee Trafficway, Kansas City, Mo. Kivett & Myers and McCallum, 1016 Baltimore Ave., Kansas City, Mo., archts. Bids May 3.

▲ **Massman Constr. Co.,** 3917 Broadway, Kansas City, Mo., LB **$1,592,438** est. $1,750,000 (7 bidders) Nallwood JUNIOR HIGH SCHOOL, Leawood, MERRIAM, KAN. Bd. Educ. Shawnee-Mission Dist. High Schools, 7401 Johnson Dr., Merriam, Kan. Perkins & Will, 309 W. Jackson, Chicago, Ill., archts. Edw. W. Tanner & Assoc., 310 W. Parkway, Kansas City, Mo., engrs. Bids June 9. CD 5/24 under LB.

▲† **George B. Emery, Jr.,** 2133 Potomac Dr., Topeka, Kan., CA $3,278,899, 200 units CAPEHART HOUSING, Schilling Air Force Base, IFB 14-612-60-65, SALINA, KAN. Base Procurement Office, Schilling Air Force Base, Salina, Kan. Bids May 19. CD 6/21, under LB.

▲ **Wiedeman Bros. Inc.,** Box 362, Scottsbluff, Neb., CA $1,670,432, 141,000 sq. ft. senior high SCHOOL, SCOTTSBLUFF, NEB. Bd. Educ., Scottsbluff, Neb. Bids May 11. CD 5/23, under LB.

▲† **Base Procurement Officer,** Ellsworth Air Force Base, Rapid City, S. D., received no bids June 15, Proj. 091-81003, 091-81004, 190 Capehart Housing units, Ellsworth Air Force Base. IFB 39-601-60-4 RAPID CITY, S. D. $3,000,000. Engineering Co., 1717 St. Joe St., Rapid City, S. D., engrs. CD 5/18.

▲ **Grey Constr. Co.,** 180 2nd St. N. E., Watertown, S. D., CA $1,733,000 (6 bidders) HIGH SCHOOL and CITY ARENA, WATERTOWN, S. D. Bd. Educ. and City, City Hall, Watertown, S. D. Bids June 5 Awarded June 15. CD 6/2.

▲ **Gamble Constr. Co.,** 5730 Wise Ave., St. Louis 10, Mo., LB $1,227,600 (8 bidders) 3 story OFFICE addn., Beaumont and Olive Sts., ST. LOUIS, MO. Southwestern Bell Telephone Co., 1010 Pine St., St. Louis 1, Mo. Bids June 14. CD 5/31.

▲ **Mayer-Raisher-Mayer Constr. Co.,** 119 N. 7th St., St. Louis 1, Mo., Owner Builds, $1,500,000, 220 RESIDENCES, Clayton Rd. between Baxter and Kehr's Mill Rds., ST. LOUIS COUNTY, MO.

▲ **Sharp Brown Contrg. Co.,** 1014 E. 19th St., Kansas City, Mo., LB $1,629,453 (3 bidders) 4 story, bsmnt. ADMINISTRATION BLDG., KITCHEN, CAFETERIA and CHAPEL, SPRINGFIELD, MO. Central Assembly of God Church, Springfield, Mo. Bids June 14. CD 6/9.

▲ **Warner Constr. Co.,** P. O. Box 769, San Angelo, Tex., CA $2,378,300. HIGH SCHOOL, ANDREWS, TEX. Andrews Independent School Dist., Andrews, Tex. Bids June 3. CD 5/20.

▲ **Steinberg & Son,** 2111 S. Harwood St., Dallas, Tex., CA $1,233,000. 4-unit NURSING, Denton State School, DENTON, TEX. Bd. of Texas State Hospitals & Special Schools, 4405 N. Lamar Blvd., Austin, Tex. Bids May 26. CD 6/8, under LB.

▲ **Southern Investors Constr. Co.,** 705 Holmes Rd., Houston, Tex., Owner builds, $451,220. 17 DWELLINGS, $433,335. 15 dwellings, $421,000 11 dwellings, HOUSTON, TEX. Grand total $1,305,555. CD 6/9.

▲ **Sheffield Steel Div. Armco Steel Corp.,** Industrial Rd., Houston, Tex., Owner builds, $4,500,000. 3rd plate-making MILL, HOUSTON, TEX. CD 4/4.

▲ **Jaffe & Martin Inc.,** 4623 Blanco Rd., San Antonio, Tex., CA $1,200,000. Job 2, SHOPPING CENTER, HOUSTON, TEX. Fed-Mart Corp., 4623 Blanco Rd., San Antonio, Tex. CD 4/14.

▲ **James G. Wilkerson, Builder,** 9203 Bonhomme St., Houston, Tex., Owner builds, $441,000; 34 DWELLINGS; $428,175, 32 DWELLINGS; $408,000, 26 DWELLINGS Sharpstown, HOUSTON, TEX. Grand total $1,277,175. CD 4/28.

▲ **Cain & Cain,** 4001 S. Freeway, Ft. Worth, Tex., CA $1,100,000, SHOPPING CENTER, PAMPA, TEX. Coronado Center, Inc., Dr. N. J. Ellis & Assocs., Pampa, Tex. and H. P. Goodrich, 3915 Fleetwood St., Amarillo, Tex. CD 6/9.

▲ **Jaffe & Martin Builders Inc.,** 4623 Blanco Rd., San Antonio, Tex., Owner builds, $438,100, 41 DWELLINGS; $426,950, 38 DWELLINGS; $411,775, 36 DWELLINGS, SAN ANTONIO, TEX. Grand total $1,266,825. CD 5/10.

▲ **McClelland Constr. Co.,** P.O. Box 448, Waco, Tex., CA $750,000. dust control sys. for plant; $250,000, WAREHOUSE and STORAGE, WACO, TEX. Universal Atlas Cement div., U.S. Steel Corp., Amicable Bldg., Waco, Tex. CD 4/20.

▲ **McClelland Constr. Co.,** P. O. Box 448, Waco, Tex., CA $8,250,000. cement PLANT ADDN., WACO, TEX. Universal Atlas Cement div. of U. S. Steel Corp., Amicable Bldg., Waco, Tex. CD 4/20.

▲ **Redding Miller Inc.,** 931 E. 6th Ave., Denver, Colo. CA $1,000,000, 4 story, 30,000 sq. ft. HEADQUARTERS, 100 car parking, Cherry Creek Shopping Center, DENVER, COLO. Rollnicks, 544 Acoma St., Denver, Colo. Paul Reddy, 104 Fillmore St., Denver, Colo., archt.

▲ **Woodrow Freyer Contractors Inc.,** 8646 W. Colfax, Denver, Colo., CA $1,800,000, 15 story, 2 bsmnts., 50x150 ft. 101 unit Glen Ayre Towers APARTMENT, swimming pool, underground parking, E. 8th Ave. and Clarkson Sts., DENVER, COLO. Ledgerwood Realty & Investment Co., 701 Colorado Blvd., Denver, Colo. Edward R. McMechen and Joseph Krabacker, 1530 Dover St., Denver, Colo., archts.

▲† **S. S. Silberblatt Co.,** 25 W. 45th St., Rm. 1408, New York 36, N. Y., CA $12,119,400, 800 unit CAPEHART HOUSING, FORT HOOD, TEX. U. S. Eng., P. O. Box 1229, Galveston, Tex. Bids May 18. CD 5/23, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

▲ **CALIFORNIA**—BA 7/27—State Div. Hys., 1120 N St., Sacramento,
Sonoma Co.—0.6 mi. US Hy. 101 freeway from Mendocino Ave. in Santa Rosa to Grant Creek, incl. five interchanges, four bridges, IV-SON-1-SRO, E, B. $5,200,000. CD 10/27/58.

BUILDINGS—BA

▲† **Calif., Twentynine Palms**—HOUSING—BA 7/19—Dist. P. Wks. Office, 11th Naval Dist., 1220 Pacific Hy., San Diego, Zone 30, 150 units Capehart Housing, Marine Corps Base, Spec. 30277. Extended date. $2,475,000. Palmer & Krisel, 11757 San Vicente Blvd., Los Angeles, Calif., archts. CD 6/1.

▲† **Nev., Fallon**—HOUSING—BA 7/22—Dist. P. Wks. Office, 12th Naval Dist., San Bruno, Calif., 106 units Capehart Housing, U. S. Naval Auxiliary Air Station, NBy (CH) 29273/60. CD 9/30/59.

▲ **Calif., San Francisco**—ALTERATIONS, STATE OFFICE—BA 7/26—State Div. Architecture, 1120 N St., Sacramento, alterations, State Office, 350 McAllister St., W.O. 4001GC-4. $1,000,000. Plans deposit $75.

† **Wash., Richland**—PLUTONIUM RECYCLE TEST REACTOR FACILITIES ADDNS.—BA 7/27—Atomic Energy Comm., Hanford Operations Office, P.O. Box 550, plutonium recycle test reactor facilities, 60 x 148 ft. maintenance and mockup facilities with 60 x 120 ft. substructure, and 14 x 36 ft. steel frame PRP critical facility, Hanford Works. CD 1/10/58.

▲ **Calif., Chico**—PHYSICAL SCIENCE & AGRICULTURE, etc.—BA 8/2—State Div. Architecture, 1120 N St., Sacramento, 2 story, 28,000 sq. ft. rein.-con. physical science and agriculture bldg., 4,000 sq. ft. headhouse and greenhouse, remodeling existing science bldg., storage and preparation areas for Biological Science, Chico State College, W.O. 4304GC-9. $1,500,000. Plans deposit $75. CD 6/19/59.

HEAVY CONSTRUCTION—LB & CA

▲ **Sharman Allen Gay & Taylor Co. Inc.,** (sub. J. Ray McDermott & Co., Inc.), Harvey, La., CA $3,500,000, 8½ mi. underwater dual transmission pipe lines, under bottom Turnagain Arm from Burnt Island to Potter near here, ANCHORAGE, ALASKA. Anchorage National Gas Corp., 3000 Spenard Rd., Spenard, Alaska, Delta Engineering Corp., 2121 San Felipe Rd. Houston, Tex., engrs. CD 5/23.

▲ **IDAHO**—State Hy. Dpt., Boise,
Peter Kiewit & Sons Co., Idaho Falls, Idaho, LB $2,745,800, (5 bidders), roadway, drainage structures, plant mix bit. surf. 4 concrete underpasses, concrete overpass, 235 ft. concrete bridge, 8.189 mi. Interstate 80N and .076 mi. U.S. 30N, Minidoka Co. Bids June 14. CD 5/25.

▲† **M. M. Sundt & B. J. Bevanda,** P. O. Box 2592, Tucson, Ariz., CA $1,249,000. replacing taxiway optical landing system, Marine Corp Auxiliary Air

NEW HEPPENSTALL TONGS PULL PILING FASTER, SAFER

First used by Dravo Corporation in construction of the New Cumberland Dam at Stratton, Ohio, these new Heppenstall Tongs make the initial pull without manual attachment to the piling. Suspended from a piling extractor with jaws locked open, the Tongs are lowered over the piling. Slackening the control line disengages a retaining pin, which closes the Tongs. A wedge action causes the jaws to grip tighter as pull is increased. When the line is pulled, the jaws again latch open ready for the next piling.

Made in 30- and 50-ton capacities, the tongs have a ¼-inch minimum jaw opening, 1¼-inch maximum. Each jaw has a series of teeth to insure positive gripping. The 30-ton tongs weigh roughly 1,150 pounds, the 50-ton tongs about 1,650 pounds. Connecting brackets are furnished to fit the particular type of extractor being used.

For more information, and a quotation, contact your Heppenstall Company Representative or Materials Handling Division, 501 Sixteenth Street, New Brighton, Pa.

Designed by Heppenstall, these new Tongs pull sheet piling without need for clevis pins or other manual attachment.

HEPPENSTALL COMPANY
Pittsburgh 1, Pennsylvania
PLANTS: Pittsburgh and New Brighton, Pa.
Bridgeport, Conn.

MIDVALE-HEPPENSTALL COMPANY
Nicetown, Philadelphia 40, Pa.

Die Blocks • Forgings • Back-Up Roll Sleeves • Rings
Industrial Knives • Materials Handling Equipment
Pressure Vessels • Hardened and Ground Steel Rolls
Vacuum and Consumable Electrode Melted Steels

Station, Spec. 24694, YUMA, ARIZ. Eleventh Naval Dist., 1120 Pacific Hy. San Diego, 1, Calif. Bids June 3, awarded June 15. CD 6/10, under LB.

▲† **Baugh Constr. Co.,** 922 Poplar Place, Seattle 44, Wash., CA **$1,468,490,** bldgs. for air-traffic control center, Inv. 4-60-106, AUBURN, WASH., Federal Aviation Agency, 5651 W. Manchester St., Los Angeles, Calif., Bids June 8. CD 6/14 under LB.

▲† **Fred D. Chadwick, Inc.** and **John W. Buchanan, Inc.,** Long Beach Calif., CA $1,445,980, improving downstream approach to Bonneville Navigation Lock, Columbia River OREGON AND WASHINGTON, U. S. Eng. 628 Pittock Block SW, 10th and Washington Sts., Portland, Ore Bids June 14. CD 6/22 under LB.

▲† **Chadwick & Buchanan,** 6691 Paramount Blvd., Long Beach, Calif., LB **$1,445,980,** est. $1,537,800, (3 bidders) dredging downstream from Bonneville Dam, Columbia River, CIVENG-35-026-60*199, OREGON. U. S. Eng., Pittock Block, Portland, Ore. Bids June 14. CD 5/23.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento, bids opened 6/22.

J. W. Briggs and **J. N. Conley,** 1825 California St., Redding, Calif., LB **$7,423,104** (8 bidders) 7 mi. freeway, US Hy. 40, graded, drainage facilities installed, frontage road graded, paved, bridge between 2.6 mi. east, Soda Springs and 1 mi. west Jct. with Rtes. 37 & 38, III-Nev-37,B,C, Nevada Co. CD 5/18.

▲ **Frazier-Davis Constr. Co.,** 1319 Macklind Ave., St. Louis, Mo., LB **$2,069,090** (8 bidders) 2,750 ft. long, 24 ft. high, 18 ft. wide Tunnel No. 1, relocation Western Pacific RR around Oroville Reservoir, Feather River Project, Butte Co. CALIFORNIA. State Dpt. Water Resources, 1120 N St., Sacramento, Calif. Bids June 22 CD 6/31.

▲ **Consolidated Western Steel Co.,** Div. U. S. Steel Co., 120 Montgomery St., San Francisco, Calif., CA **$1,667,464,** (steel constr.) Clear Creek and Trinity Power Plants, Central Valley Proj. DS 5334, CALIFORNIA. Bureau of Reclamation, Bldg. 53, Denver Federal Center. Denver. Colo. Bids June 9. CD 6/13 under LB.

† **Procurement Office,** Beale Air Force Base, Calif., rejected bids May 18, 21 animal dog kennel and support bldg. Beale Air Force Base, IFB 04-666-60-43, BEALE AIR FORCE, CALIF. Will re-advertise. CD 9/25/59.

▲ **J. E. Haddock Ltd.,** 3538 E. Foothill St., Pasadena, Calif., LB **$2,005,719** (5 bidders) pavement of aircraft apron area, Passenger Terminal, Los Angeles International Airport, LOS ANGELES, CALIF. Bd. Airport Comrs., City Hall, Los Angeles, Calif. CD 6/8/56.

▲ **Rapp Constr. Co.,** 705 Bennett Ave., Santa Rosa, Calif., LB **$1,246,000,** (7 bidders), rein.-con. and prestressed concrete, steel roof decking, etc. Grandstand, Sonoma County Fairgrounds, Sonoma, SANTA ROSA, CALIF. Sonoma County, Courthouse, Santa Rosa, Calif. Bids June 14. CD 5/24.

▲† **Barney Wilkerson Constr. Co.,** P.O. Box 2156, Riverside, Calif., CA **$1,266,669** rehabilitation, 650 Wherry Housing units, George Air Force Base. IFB 04-609-60-34B, VICTORVILLE, CALIF. Base Procurement Office, George Air Force Base, Victorville, Calif. Bids Apr. 19. CD 4/22, under LB.

▲† **Gunther & Shirley Co.,** 4560 Sherman Oaks Ave., Sherman Oaks, Calif., **E. V. Lane Corp.,** 2675 Park Blvd., Palo Alto, Calif., and **Gibbons & Reed Co.,** 825 W. 9th North St., Salt Lake City, Utah, LB **$4,142,000,** est. $4,046,410 (6 bidders) conversion of P.O.L. facilities. NBy-25540, PEARL HARBOR, HAWAII. Dist. P. Wks. Dpt., 14th Naval Dist., Pearl Harbor, Hawaii. Bids June 17. CD 6/6.

▲† **Morrison-Knudsen Co., Inc.,** 319 Broadway, P.O. Box 450, Boise, Idaho, CA **$1,434,000,** Nike Hercules Site 1, Kahuku Point, Oahu, ENG-94-612-60-9, HAWAII. U. S. Eng., Bldg. 96, Fort Armstrong, Honolulu 13, Hawaii. Bids June 9. CD 5/10.

BUILDINGS—LB & CA

▲ **Skyline Constr. Co.,** 299 Crestwood Rd., Kaysville, Utah, LB **$1,077,000,** est. $1,000,000, masonry, brick JUNIOR HIGH SCHOOL, Kaysville, FARMINGTON, UTAH. Davis Co. Bd. Educ., Farmington, Utah. Bids June 9. CD 6/2.

Siesta Homes, Inc., 1000 W. Broadway Rd., Tempe, Ariz., Owner Builds, **$913,000,** 99-unit APARTMENT, Broadway near Beck Ave., TEMPE, ARIZ.

▲† **Oakland Constr. Co.,** 1978 S.W. Temple St., Salt Lake City 15, Utah, LB **$1,152,850,** TEST CELL bldg., fill station, 2 pre-fabricated bldgs., cooling tower, Nevada Test Site, MERCURY, NEV. Atomic Energy Comn., 1233 S. Main St., Las Vegas, Nev. Bids June 7. CD 5/6.

▲ **Robert E. McKee General Contractor, Inc.,** 4701 San Fernando Rd., West Los Angeles, Calif., CA **$1,430,700,** THIRD WARD LIVING UNIT, Youth Training School, Dpt. Youth Authority, W9-0-4314GC-1, CHINO, CALIF. State Div. Architecture, 1120 N St., Sacramento, Calif. Bids June 9, awarded June 15. CD 6/14, under LB.

▲ **Newland Constr. Co.,** Box 958, Everett, Wash., LB **$1,827,000,** (4 bidders), 165,780 sq. ft. HIGH SCHOOL, EVERETT, WASH. School Dist. No. 2, Auditorium Bldg., Everett, Wash. Bids June 8. CD 5/27.

▲ **Braemel Constr. Co.,** 1150 S. Beverly Dr., Los Angeles, Calif., Owner Builds, **$2,230,000,** 13 story APARTMENT, 8440 Sunset Blvd., HOLLYWOOD, CALIF. Orr, Strange & Inslee, 3142 Wilshire Blvd., Los Angeles, Calif., archts.

▲ **Gluck Investment Co.,** P. O. Box 111, Van Nuys, Calif., Owner Builds, **$1,000,000,** 5 story OFFICE, RESEDA (LOS ANGELES P. O.), CALIF. Albert C. Martin & Assocs., 333 South Beaudry Ave., Los Angeles, Calif., archts.

▲ **Commerce Investment, Inc.** and **Andersen-Wentfall Co., Inc.,** 3427 N.E. Halsey St., Portland, Ore., LB Est. **$12,000,000,** (8 bidders), POST OFFICE AND MAIL HANDLING FACILITIES (Lease-Build), PORTLAND, ORE. U. S. Post Office Dept., 511 N.W. Broadway, Portland, Ore. Bids June 20. CD 5/18.

▲ **Swinerton & Walbert Constr. Co.,** 200 Bush St., San Francisco, Calif., CA est. **$2,000,000** (1st Stage) 4 story, 94,000 sq. ft. rein.-con. FRENCH HOSPITAL, SAN FRANCISCO, CALIF. French Mutual Benevolent Society, 5th Ave. and Geary, San Francisco, Calif. CD 1/13.

▲ **Pacific Coast Builders,** 1 South Park, San Francisco 7 Calif., CA **$3,866,000,** rein.-con. concrete block Southwest SENIOR HIGH SCHOOL, Eucalyptus Dr., SAN FRANCISCO, CALIF. San Francisco Unif. School Dist., 135 Van Ness, San Francisco, Calif. Bids June 8. Awarded June 22. CD 6/14, under LB.

▲ **M & K Corp.,** 519 California St., San Francisco, Calif., LB **$1,198,000** (3 bidders) Increment IV and V, Santa Clara County HOSPITAL, SAN JOSE, CALIF. Bd. Suprvs. Santa Clara County, Courthouse, 1st & Rosa, San Jose, Calif. Stone, Marraccini & Patterson, 535 Mission St., San Francisco, Calif., archts. Bids June 17. Bids Mar. 31 rejected. CD 4/8, under LB.

▲ **Pacific Coast Builders,** 1 South Park, San Francisco, Calif., CA **$1,783,490,** HIGH SCHOOL, Old Mission Road and Evergreen Dr., SOUTH SAN FRANCISCO, CALIF. South San Francisco Unif. School Dist., 398 B St., South San Francisco, Calif. CD 6/6, under LB.

▲ **Del E. Webb Constr. Co.,** S 23 Ave., Phoenix, Ariz., and Roy P. Drachman, Ariz. Land Title Bldg., Tucson, Ariz., Owner Builds, **$15,000,000,** 600,000 sq. ft. CHRIS-TOWN SHOPPING CITY, 19 Ave. and Bethany Home Rd., PHOENIX, ARIZ., Friedman & Jobusch, Archts. & Engrs., 2233 E. Broadway, Tucson, Ariz., archts.-engrs. CD 3/29/55.

CANADA

HEAVY CONSTRUCTION—BA

▲ **Ont., Toronto**—BA 7/5—Municipality of Metropolitan Toronto, 67 Adelaide St. E., 760 ft. elevated roadway Frederick Gardiner Expressway (R-10-60), $1,500,000. Lakeshore Expressway Consultants, 30 Eglinton Ave. E., engrs. CD 2/26/52.

BUILDINGS—BA

▲ **N. S., New Waterford**—HOSPITAL etc.—BA 7/8—New Waterford Dist. Consolidated Hospital Comn., hospital and nurses home, Maple Hill, $1,100,000. Extended date. Gregory, Lambros & Keith L. Graham, 53 Spring Garden R., Halifax, archts. Brett, Ouellette, Blauer Assocs., 1010 St. Catherine St. W, Montreal, Que., engrs. CD 5/23.

HEAVY CONSTRUCTION—LB & CA

▲ **NEWFOUNDLAND**—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. **McNamara Constr. (Newfoundland) Ltd.,** 35 Elizabeth St., St. Johns Newfoundland, CA **$1,099,400,** base course, bit. base course Mile 10 to Mile 25, Trans-Canada Hy., Terra Nova National Park, Contract 8-60-TCH N. St. Johns. Bids May 10. CD 5/18.

BUILDINGS—LB & CA

▲ **G. A. Baert Constr. Co. Ltd.,** 314 Dawson Rd., Winnipeg, Man., CA **$3,300,000,** (8 bidders) 6 story REHABILITATION CENTRE, WINNIPEG, MAN. Sanatorium Bd. of Manitoba, 668 Bannatyne Ave., Winnipeg, Man. Bids May 25. Awarded June 3. CD 5/12.

▲ **E. G. M. Cape & Co., (1956) Ltd.,** 4898 Western Ave., Montreal, Que., CA **$3,012,390,** (7 bidders), 5 story, 154x235 ft. rein.-con., cut stone, granite, POST OFFICE, pile fdn., air-conditioning, QUEBEC CITY, QUE. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids May 4, awarded June 13. CD 5/12, under LB.

▲ **Stone & Webster Canada Ltd.,** 44 King St. W., Toronto, Ont., CA Est. **$15,000,000,** TITANIUM OXIDE PIGMENT PLANT, TRACY, QUE. British Titan Products of Canada Ltd., 5410 Ferrier St., Montreal, Que. Dobush & Stewart, 4635 Sherbrooke St. W., Montreal, Que., archts. DeStein & Assocs., 4147 Sherbrooke St. W., Montreal, Que., engrs. Awarded June 7. CD 4/4.

U. S. POSSESSIONS

BUILDINGS—BA

▲† **Canal Zone**—HOUSING—BA 7/22—Panama Canal Co., 21 West St., New York, N. Y., U. S. A., 84 housing units, Balboa Heights. $1,000,000. Plans deposit $50. CD 3/29.

FOREIGN

HEAVY CONSTRUCTION—BA

Malaya—BA—9/2—Central Electricity Bd., Federation of Malaya, Kuala Lampur, supply and erection of seven power transformers in sizes ranging between 20 MVA and 30 MVA and one 8 MVA power transformer, all suitable for connection to 132 kv sys. together with two 33/.433 kv grounding/auxiliary transformers, Cameron Highlands Scheme Contr. No. 6. Plans on receipt of $15. Messrs, Preece, Cardew & Rider, 8, 10 & 12 Queen Anne's Gate, London S.W1, England engrs. CD 2/3/58.

PROPOSED PROJECTS

WATER SUPPLY

Utah, Lehi—City, City Hall, reservoir addn., distribution lines. **$228,000.** To go ahead 1962.

Utah, Tooele—City, City Hall, 2 m.g. reservoir and mains, southwestern section. **$250,000.** To go ahead 1961.

SEWERS, WASTE DISPOSAL

▲ **Conn., Norwalk**—INCINERATOR—City of Norwalk, Cit, Hall, South Norwalk, incinerator. **$1,300,000.**

▲ **N. J., Long Branch**—Long Branch Sewage Auth., City Hall, pumping station at Overlook Ave., **$1,300,000,** Otis R. Seaman, 485 Broadway, (sewage plant abandoned). CD 12/17.

Pa., Duncannon—TREATMENT PLANT—Boro of Duncannon Municipal Authority, Boro Hall, lateral, trunk & intercepting sewers, treatment plant and outfall sewer. To go ahead 1961. **$761,000.**

Wash., Cheney—SEWERAGE SYSTEM—City, City Hall, sewerage system. To go ahead 1961. **$530,000.**

BRIDGES

▲ **COLORADO**—State Hy. Dpt., 4201 E. Arkansas St., Denver,

Arapahoe Co.—structures .5 mi. State Hy. 8, Proj, FAI I-70-4(13)316, **$872,000.**

Weld and Larimer Counties—structures .3 mi. State Hy. 56-Loveland Circle, Proj. FAI I-5-25-3(22)251, **$1,000,000.** Mark U. Watrous, 4201 E. Arkansas St., Denver, State Hy. Engr.

▲ **OHIO** — Dpt. Hys., State Depts. Bldg., Columbus, Zone 15,

Lorain Co.—eliminate B. & O. R.R. underpass at junction Rte. 303, 57 and 76, **$1,900,000.**

Richland Co.—bridge over Erie R.R. on Trimble Rd. and Cloverleaf interchange, Mansfield Expressway, **$791,000.**

Ind., Fort Wayne—Comrs. Allen Co., Courthouse, replacing Papermill Bridge over St. Joseph River, road straightening on St. Joseph Center Rd., **$500,000.** Zurbach Engineers, 202 Paramount Bldg., constr. late 1961 or 1962.

Newfoundland, St. John's—City Council, City Hall, 2 overpasses, Bowring Park, **$500,000.**

STREETS AND ROADS

▲ **Tex., Sherman**—City, City Hall, paving, repairing, curbs and gutters, 125 mi. of street, **$2,140,000.** Koch & Fowler & Grafe, 3900 Lemmon Ave., Dallas, consult. engrs.

Wash., Clyde Hill—Town, Town Hall, plans imprv. 92 and 98 Aves. N.E., N.E. 14 and 24 Sts., **$225,000.** Bids this year. G. T. Sparrow & Assocs., 2220 82 St. S.E., Mercer Island, consult. engrs. CD 6/10.

EARTHWORK, WATERWAYS

▲† **Arkansas**—Central Valleys Soil Conservation Dist., Morrilton, Van Buren Co. Soil Conservation Dist., Clinton, and Pope County Soil Conservation Dist., Russellville, 201,312 acres watershed protection, West Fork Point Remove Creek, **$3,911,017;** 87,865 acres watershed protection, East Fork Point Remove Creek, **$1,897,845,** Conway and Van Buren Counties.

▲ **Kans., Atchison**—Atchison City SCD, City Hall, watershed protection, White Clay, Brewery, Whisky Creeks, City of Atchison, 12,540 acres, for Soil Conservation Service, **$2,447,560.**

Ky., Barren—Barren County, SCD, Courthouse, Glasgow, and Metcalfe Co. SCD, Courthouse, Edmonton, watershed protection, Beaver Creek 33,848 acres, for Soil Conservation Service, **$514,430.**

Minn., Kittson—Kittson County SCD and County Bd. Commrs., Village of Hallock, Hallock, watershed protection, Middle Forks of Two Rivers, 57,532 acres, for Soil Conservation Service, **$263,538.**

▲ **North Carolina**—HYDRO ELECTRIC PLANT—Duke Power Co., 430 S. Church St., Charlotte, hydro electric plant on Catawba River, near Cowans Ferry, **$60,000,000.**

AIRPORTS

▲† **Alaska**—COMMUNICATION FACILITIES—U. S. Eng., P.O. Box 7002, Anchorage, communication facilities between Neklason Lake Air Force Station and Dome Air Force Station. **$3,500,000** funds released.

PUBLIC BUILDINGS

▲ **Ind., Wabash**—SCHOOLS—Metropolitan School Dist., Wabash Co. Courthouse, plans by Edward D. James & Assoc., 122 E. Michigan St., Indianapolis, 2 junior-senior high schools, one in northern and other in southern dist. of county, **$2,894,224.** CD 1/21.

▲ **Mass., Boston**—CLASSIFICATION BLDG.—Commonwealth of Mass., Dpt. Correction, c/o Div. Bldg. Constr., 38 Chauncy St., plans by M. A. Dyer Co., 24 School St., Boston, Mass., P-804 classification bldg. **$7,000,000-$8,000,000.** M. A. Dyer, 24 School St., Boston, Mass., archt., will make preliminary studies.

▲ **N. J., Collingswood**—HIGH SCHOOL ADDN.—Collingswood Bd. of Educ., plans by Howell Lewis Shay

& Assoc., Parker Bldg., 15th & Chestnut Sts., Philadelphia, Pa., bond issue voted, high school addn., $1,600,000. CD 1/25.

▲ **N. J., Neptune**—HOUSING—Neptune Housing Auth., Municipal Bldg., plans by Frank Adler, E. 275 Midland Ave., Paramus, 60-unit housing, Embury and Heck Ave., NJ 48-A, $1,262,500. CD 5/12/59.

N. Y., Brookhaven — SCHOOL — Bd. Educ. UFSD 24, Brookhaven, plans by Frederick P. Wiedersum Assoc., archt.-engrs., 65 Roosevelt Ave., Valley Stream, N. Y., elementary school, Barton Ave., North Patchogue. $900,000.

▲ **N. Y., Lake Ronkonkoma**—SCHOOL—Bd. Educ., voted $2,358,000 bonds junior high school.

▲ **N. Y., New York**—DORMITORY—Bd. of Higher Educ., 535 E. 80th St., New York, Zone 21, plans by De Young, Moscowitz & Rosenberg, 205 E. 42nd St., New York 17, N. Y., 10 story dormitory, W. 27th St. between 7th and 8th Aves. for Fashion Institute of Technology. $2,000,000. S. W. Brown, 405 Lexington Ave., New York 17, N. Y., mechanical engr. DiStasio & Van Buren, 136 Liberty St., New York 6, N. Y., structural engrs.

▲ **N. Y., Oyster Bay**—HIGH SCHOOL—Bd. Educ., Union Free School Dist. No. 5, Oyster Bay, plans by Frederic P. Wiedersum Assoc., 65 Roosevelt Ave., Valley Stream, N. Y., Glen Cove high school, Dosoris Lane, Glen Cove. Over $2,500,000. Foster & Cafarelli, 65 Roosevelt Ave., Valley Stream, N. Y., consult. engr.

▲ **N. C., Greensboro**—STUDENT UNION etc.—Agricultural & Technical College of North Carolina, E. Market St., student union, $566,000; biology classrooms, $643,000; mathematics bldg., $426,000; physical educ., gymnasium, $813,000; heating plant, $110,000.

▲ **N. C., Greenville**—DORMITORIES, ETC.—East Carolina College, Wilson Hall Dormitory, $537,500; Men's dormitory, $625,000; student teaching school, $400,000; physical ed. facility, $1,255,000; addn. to Joyner Library, $423,000; men's dormitory and cafeteria, $1,475,500 addn. Flanagan Bldg. and Maintenance Shop, $400,000; addn. Whichard Music Bldg., $400,000; addn. Wright Bldg., $548,000; classrooms, $890,000 auditorium, $400,000.

▲ **O., Cleveland**—UNDERGROUND EXPOSITION HALL—City, City Hall, Zone 14, bond election Nov. 8, underground exposition hall under mall, $10,000,000. CD 11/10/58.

S. C., Rock Hill—BANCROFT & PHELPS DORMITORIES—Winthrop College, plans by Baker & Gill, 609 Chestnut St., Florence, S. C., Bancroft and Phelps dormitories addns. $600,000. CD 6/8.

▲ **Tex., Beaumont**—SCHOOL—Southside Ind. School Dist., South Park Bd. of Education, plans by Golemon & Rolfe, Bowie Bldg., senior high school, $1,000,000 to $1,500,000; junior high school, $1,200,000. CD 10/28/59.

▲ **Tex., Dallas**—SCHOOL—Dallas Ind. School Dist., 3700 Ross Ave., plans by Goodwin & Cavitt, Vaughn Bldg., and Mark Lemmon, 201 Thomas Bldg., Thomas C. Marsh Junior High School, $1,500,000. R. L. Rolfe, 2401-A Bryan St., and Zumwalt & Vinther, Mercantile Bldg., consult. engrs. CD 3/16.

Tex., Waxahachie—SCHOOL—Waxahachie Ind. School Dist., plans by Upshaw & Todd, Cliff Towers Hotel, Dallas, elementary school, $595,000. CD 5/27.

▲ **Tex., Wichita Falls**—SCHOOL—Wichita Falls Ind. School Dist., plans by Pardue, Read & Dice, 1901 10th St., Junior-Senior high school, $1,500,000. CD 12/3/58.

▲ **Va., Christiansburg** — SCHOOLS — Montgomery Co. School Bd., bond election Sept. 13 $2,000,000, elementary school, $600,000; primary school, $600,000. CD 4/7.

▲ **Va., Richmond**—MEDICAL FACILITY—Medical College of Va., 523 N. 12th St., plans by Merrill C. Lee, 601 E. Franklin, medical education bldg., $5,500,000. Wiley & Wilson, Court Ind. Bldg., Lynchburg, consult. engrs. CD 9/17/59; Student Social Center, $600,000.

Va., Richmond—SCIENCE—Richmond Professional Institute Div. of College of William and Mary, Shafer & Franklin Sts., plans by Walford & Wright, 103 E. Cary, science facility, $563,000. CD 9/24/59.

▲ **Wash., Vancouver**—SCHOOL—School Dist. 37, voted bonds Mar. 8, junior-senior high school, $2,000,000, McCoy & Bradbury, 7007 Highway 99, archts.; elementary school, McLoughlin Heights near MacArthur Blvd. and Andresen Rd., $550,000. Leaver & LaLonde, Central Bldg., archts. CD 3/16.

▲ **Que., Quebec City** — REHABILITATION CENTER — Dpt. of P. Wks., Parliament Bldgs., rehabilitation center, Blvd. Hamel, $3,000,000.

▲ **Que., Shawinigan**—SCHOOL—Catholic School Bd. of Shawinigan, school, 5th St. $1,000,000.

▲ **Que., Sherbrooke**—NORMAL SCHOOL—Dpt. P. Instruction, Parliament Bldgs., Quebec City, plans by Audet, Tremblay & Audet, 1100 Prospect St., Normal School, University Campus, $3,000,000. Cote, Lemieux, Carignan & Bourque, 144 N. Vimy St., consult. engrs. CD 3/17.

COMMERCIAL BUILDINGS

Colo., Denver—APARTMENT—Besierge Corp., c/o Robert Riebling, 1050 Littleton Blvd., Littleton, plans by James E. Reagan, 2657 S. Broadway, 6 stories 134 x 48 sq. ft., apartment, South Josephine and Buchtel Blvd., $500,000. John O. McNamara, 640 Sherman, consult. engrs.

▲ **Conn., Clinton**—DWELLINGS—Beach Park Estates, Inc., 16 High St., 90 houses, Beach Park Estates, Beach Park Rd., $1,799,100.

Conn., Colchester—HOMES—Miracle Value Acres, Inc., Route 16, Colchester, 59 houses, Miracle Value Acres, Route 16. $707,410.

Conn., Old Greenwich—HOMES—Fawn Ridge Development Corp., Route 9, Elmsford, N. Y., 73 houses, Palmer Hill Rd., North Mianus. $730,000.

Fla., Miami—OFFICE—The Skyline Bldg. Corp., c/o Theodore Gottfried, archt., 844 Biscayne Blvd., Miami, 16 story 25x100 office NE 1st Ave. near Flagler St. $500,000. H. J. Ross & Assocs., 1731 Biscayne Blvd., Miami, consult. engrs.

▲ **Fla., Tampa**—OFFICE—Marine Bank & Trust Co., Franklin & Madison Sts., 10 story office. $4,000,000.

▲ **Hawaii, Honolulu** — OFFICE — Hawaiian Government's Employees Assoc., 400 S. Beretania St., 11 story office, Queen and Mililani St. $1,000,000.

▲ **Hawaii, Honolulu**—HOTEL—Mr. and Mrs. Wong Koon Chuck, 116 S. King St., plans by William Au, 409 Boston Bldg., 12 story hotel, Fort and Kukui Sts., $2,000,000.

Ill., Chicago—OFFICE—Illinois Bell Telephone Co., 206 Washington, zone 10, plans by Holabird & Root, 180 N. Wabash, Zone 1, 6 story phone exchange, Dearborn & Illinois Sts., $5,500,000. CD 8/2/57.

La., New Orleans—LIBRARY—Dillard University, Gentilly Blvd., plans by Goldstein, Parham & Labouisse, American Bank Bldg., New Orleans, La., library. $600,000.

▲ **Mass., Andover**—COUNTRY CLUB—County Club Development Corp., c/o Robert Stone Co., Inc., 89 Main St., Ahdover, Mass., plans by Clinton F. Goodwin, 25 Washington Sq., Haverhill, Mass., Indian Ridge country Club. $1,250,000. CD 5/26.

Mich., Detroit—MOTEL—Holiday Inns of America, 3736 Lamar Ave., Memphis, Tenn., motel, swimming pool, Trumbull, Howard & Bagley., over $500,000. Constr. 1960.

▲ **Minn., Minneapolis**—OFFICE & HOTEL CENTER—KSTP Radio & Television, 3415 University Ave., St. Paul, Minn., plans by Hammel & Green, Inc., 2650 University Ave., St. Paul, Minn., 15 story, 95,000 sq. ft. office and hotel center, University Ave. and Bedford St. $9,000,000.

▲ **Neb., Omaha**—APARTMENT—The Masons, 401 Masonic Temple, plans by John Latenser, 1307 Farnam, 21 story apartment, 39th, 40th, and Cummings Sts., $5,000,000.

▲ **N. J., Dover**—APARTMENT—Reisen Lumber Co., 1080 Morris Ave., Union, 400 unit apartment, Park Heights Section, $1,000,000.

▲ **N. Y., Brooklyn**—APARTMENT—Amalgamated Meat Cutters & Butchers Workmen of North America, 113 W. 42nd St., New York 36, N. Y., 340 co-operative apartment, Segeman and Hopkinson Aves., Bristol St. and Linden Blvd. $5,596,400.

▲ **N. Y., Jackson Heights**—HOUSES—Boston Pines Homes, 80-18 31st Ave., Jackson Heights, plans by F. J. Meier, 31-08 30th Ave., Long Island City 2, N. Y., 72 two family houses between 11 St. and 73rd Sts. on 31st Ave. $1,200,000.

▲ **N. Y., New York**—CATHOLIC STUDENT CENTER—Catholic Center at New York University, 2 Washington Sq. N., New York, N. Y., plans by Eggers & Higgins, 100 E. 42nd St., New York, N. Y., 4 story Catholic Student Center, Washington Sq. Campus. $1,225,000. Frank J. Sullivan, 41 E. 42nd St., New York 17, N. Y., mechanical engr. Matthew Hiller, 207 E. 32nd St., New York 16, N. Y., structural engr. CD 2/19.

▲ **N. Y., New York**—OFFICE—Fisher Brothers, 6 E. 45th St., New York Zone 17, plans by Emery Roth & Sons, 400 Park Ave., New York 22, N. Y., 40 story office, 3rd Ave. between East 39th and East 40th Sts. $22,000,000.

▲ **N. Y., New York**—APARTMENT—Pit-Bay Housing Co., Inc., 131 E. 17th St., New York Zone 3, 198 Twin Terrace Apartments, Baychester Ave. between Nereid and Pitman Aves., Bronx Boro. $5,200,000.

▲ **O., Columbus**—DEPARTMENT STORE—Sears Roebuck & Co., 970 S. Homan Ave., Chicago, Ill., department store 100 acre tract Morse Rd. and North Freeway, $1,500,000.

▲ **O., Toledo**—DEPARTMENT STORE—LaSalle & Koch Co., Huron and Adams Sts., 2 story, 150,000 sq. ft. department store, 1,100 car paved parking, Secor Rd., near Central Ave., $2,000,000. Constr. 1960. CD 3/22/56.

▲ **Okla., Okla. City**—MOTEL—Terminal Motel, c/o Jimmie E. Leath & Jay Powell, 100 North St., Midland, Tex., 2 story masonry 100-room motel, swimming pool. $1,000,000.

▲ **Pa., Berwyn**—APARTMENT—John Edward Loftus, Jr., 103 Merbrook Lane, Merion, plans by John T. Brugger, Jr., King of Prussia, 376 unit apartment, stores and garage, Route 202, $5,500,000.

▲ **Pa., Valley Forge**—FREEDOM CENTER—American Freedom Foundation, Inc., plans by Harold G. Wilson, 125 Coulter Ave., Ardmore, American Freedom Center, $2,500,000. CD 6/1.

▲ **Pa., Valley Forge**—MUSEUM—Valley Forge Historical Society, museum, $1,000,000. CD 3/18/57.

▲ **Tex., Abilene**—SHOPPING CENTER—Glove Development Co., Knuckles Crossing Rd., Austin, shopping center, $2,750,000; sanitary-storm sewers, $119,000; area earthwork, $61,000; water lines, related work, $57,500; paved area and Auto center, $90,000. Bridges & Campbell, 840 Amherst St., consult. engrs. CD 6/13.

▲ **Tex., Dallas**—SHOPPING CENTER—Webb Royal Center, 4301 Lakeside Drive, shopping center, $1,600,000; site earthwork, $70,000; water, $55,000; lighted area and auto parking center, pavement, $106,000. Webbs Chapel Rd. At Royal Lane, Williams & Reeves, 4301 Lake-Side Drive, consult. engrs. Start constr. early July.

▲ **Tex., Houston**—STORES—Ben Franklin Stores, and T. G. & Y. Stores, (Div. of City Products Corp.), 1364 Federal Rd., stores, $1,000,000.

▲ **Tex., Houston**—OFFICE—Century Properties, 3509 N. Parkwood St., plans by Caudill, Rowlett & Scott, 3400 Montrose Blvd., Dow Chemical Co. Lessee, 4 unit office center, $1,750,000; paved area and parking center, $115,000.

▲ **Tex., Houston**—OFFICE—Interstate Life Insurance Co., 5650 Kirby Drive, plans by Zimmerman & Wisdom, 1116 Hawthorne St., 14 story office bldg., $3,500,000. Bids by Fall. CD 12/7/59.

▲ **Tex., Houston**—MOTOR HOTEL—Ramada Inns of America, 3825 E. Van Buren, Phoenix, Ariz., 9 story motor hotel, swimming pools, $5,000,000.

▲ **Va., Chester** — APARTMENTS — William M. Benton, Route 10, Richmond, plans by J. K. Thomas, apartments, $1,360,000. CD 6/14.

▲ **Wash., Richland**—SHOPPING CENTER—H. E. Garmo, E. 5 39th, Spokane, shopping center, $1,000,000. constr. 1960.

▲ **Ont. Toronto**—OFFICE BLDG.—H. G. Winton Ltd., 600 Eglington Ave. E. plans by K. R. Cooper, 59 Mobile Dr., Toronto, 14-story office, Yonge St. and Wellesley St. W., $1,000,000.

▲ **Que., Beaconsfield**—Housing—Westchester Estates Ltd., 261 Shore Rd.; housing, $1,000,000.

▲ **Que., Montreal**—SCIENCE, AUDITORIUM—Loyola College, 7174 Sherbrooke St. W., plans by Peter Dickinson, 1374 Sherbrooke St. W., science bldg., auditorium and library, $1,500,000. Brett Ouelette Blauer, 1010 St. Catherine St. W., consult. engrs. CD 4/25.

INDUSTRIAL BUILDINGS

▲ **Ariz., Joseph City** — CHOLLA STEAM GENERATING PLANT—Arizona Public Service Co., 501 S. 3 Ave., Phoenix, 110,000 kw. Cholla Steam Generating Plant, $19,000,000.

Calif., Oakland—TERMINAL—Freightways Terminal Co., Consolidated Freightways, Inc., 1555 Doolittle Dr., San Leandro., terminal & shops Port of Oakland Outer Harbor. Over $600,000.

▲ **Ind., Indianapolis** — POWER SUBSTATION — Public Service Co. of Indiana, 1000 Main St., Plainfield, power substation south of Stop 8 Rd. and east of N. Y. Central tracks, $2,260,000. CD 4/12.

▲ **Minn., Golden Valley (P. O. Minneapolis)**—FACTORY ADDN.—Minneapolis-Honeywell Regulator Co., 2753 Fourth Ave. S., Minneapolis, Minn., plans by Ellerbe & Co., 333 Sibley St., St. Paul, Minn., 227,000 sq. ft. factory addn., 1885 Douglas Dr. N. $1,000,000. Bids before July 15.

▲ **O., Powhatan Point** — CHEMICAL PLANT — North American Coal Corp., 12800 Shaker Blvd., Cleveland, Zone 20, chemical plant, $1,000,000. Devenco, Inc., 50 Bway., New York, N. Y., design engrs. David Gordon & Co., 83 Hickory Grove, Larchmont, N. Y., consult. engrs. CD 6/14.

▲ **O., Toledo**—GRAIN ELEVATOR—Mid States Terminals, Inc., Bd. of Trade Bldg., remodel 400,000-bu. grain elevator Maumee River, $2,000,000. CD 4/13 under Indiana Farm Bureau Cooperative Assn., Indianapolis, as owner.

▲ **O., Toledo**—PLANT—Sun Oil Co., 1701 Woodville Rd., high grade napthalene plant, $8,000,000.

▲ **Tex., Houston** — PLANT — Petro-Tex Chemical Corp., (Tenn. Gas Transmission Co. and Food Machinery & Chemical Corp.) La Porte Rd., chemical plant, $22,500,000; water system, $60,000; area and parking pavement, $100,000, La Porte Rd. Constr. 1961. CD 6/1.

▲ **Wash., Longview**—PLANT—United Pacific Aluminum Corp., 5311 S. Avalon St., Los Angeles, Calif., aluminum reduction plant. $10,000,000. Constr. 1960.

▲ **Ont., Hamilton**—PLANT EXPANSION—International Harvester Co. of Canada Ltd., 208 Hillyard St., plans by Kyles & Kyles, 247 John St. S., 200,000 sq. ft. plant addn., Burlington and Wilcox Sts., $8,500,000.

UNCLASSIFIED

▲† **Calif., Dixon** — TRANSMISSION BLDG. — Dist. P. Wks. Office, 12th Naval Dist., San Bruno, transmission bldg. expansion and two 600 ft. transmitter towers, Naval Radio Station, near here. $2,000,000-$3,000,000. McCreary & O'Brien, P. O. Box 464, San Francisco, Calif., consult. engrs.

N. Y., New York—CHILDREN'S ZOO—Dpt. Parks, Arsenal Bldg., Central Park, New York, Zone 21, plans by Aymar Embury II, Edward C. Embury, 150 E. 61 St., New York 21, N. Y., children's zoo, Central Park on 1 acre between 65 and 66 Sts. at 5th Ave. $500,000. Constr. May 1961.

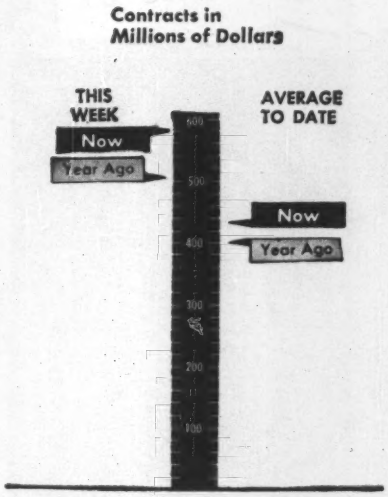
▲ **Tex., Ft. Worth**—COLISEUM—Texas Christian University, Campus, plans by Joseph R. Pelich, 1203 Trans Amer. Life Bldg., 1 story, 12,000 seat, masonry, Coliseum, $1,500,000. CD 1/22.

AMERICANS ABROAD

▲ **Hong Kong**—HOTEL—Leo F. Corrigan, 211 N. Ervay, Dallas, Tex., U.S.A., 25 story, 1,000 room hotel. $11,000,000.

Construction Scoreboard

This Week . . .



AMOUNT OF CONTRACTS LET

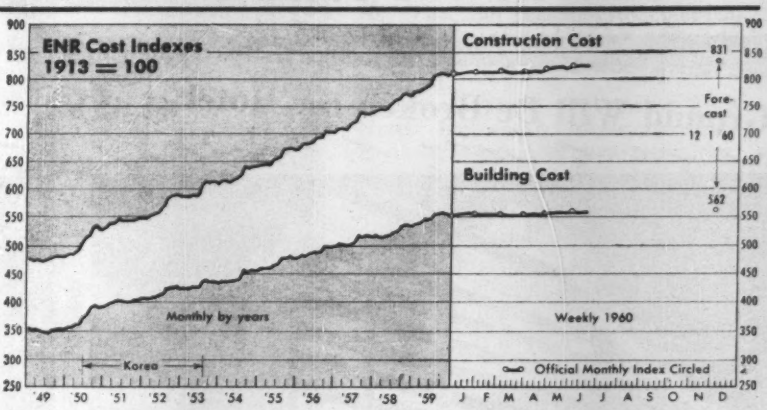
Contracts Awarded In 50 States By Type	This Week	Cum. 26 wks 1960	Chge '59-'60
	millions		%
All Heavy Construction	$686.4	$11,362.0	+ 9
By Ownership			
PRIVATE	298.3	6,136.0	+21
PUBLIC	388.1	5,226.0	− 3
State & Municipal	235.9	3,933.5	+ 5
Federal	152.2	1,292.5	−20
By Type of Work			
PUBLIC			
Waterworks	6.4	236.9	+ 8
Sewerage	20.9	290.9	−11
Bridges*	9.3	401.7	+31
Highways	80.5	1,605.9	+ 2
Earthworks, Dams & Waterways	69.7	428.6	− 1
Buildings:			
Excl. Housing	55.7	1,190.6	−14
Housing	37.9	302.2	−23
Unclassified	107.8	770.5	+ 4
PRIVATE			
Buildings:			
Mass Housing	175.8	3,170.9	+35
Commercial	63.3	1,166.1	+ 4
Industrial	28.2	1,291.7	− 6
Unclassified	30.9	506.0	+134

*Includes Private bridges

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

NEW CONSTRUCTION CAPITAL

	Week of June 23	Cum. 25 wks 1960	Chge '59-'60
	millions		%
Corporate Securities	$ 50.5	$1,482.4	−30
State and Municipal:			
All Except Housing	411.7	3,393.9	+10
Housing	167.7	181.3	+493
Federal Loans	0.9	73.7	+11
Federal Aid	....	2,717.8	+1,410
Total Nonfederal	$630.8	$7,849.2	+48
Federal Appropriations:			
Projects in U. S.	....	191.6	+400
Outside U. S.	....	6.8	....
Total New Capital	$630.8	$8,047.2	+50



ENR INDEXES (1913=100), 20-cities' average	Week of June 23 1960	% Change from May 26 1960	% Change from June 25 1959
Construction Cost	826.13	+0.47	+2.67
Building Cost	560.72	+0.42	+1.70

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

Latest Month . . .

BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	May 1960 (millions)	Percent Change from last Month	Year
Total U. S. (50 states)	$122,905	+0.6	+ 7.2
By Ownership—			
Private	54,779	+1.0	+10.1
State & Municipal	53,809	+0.3	+ 5.3
Federal	14,318	+0.3	+ 4.3
By Type of Work—			
Waterworks	2,903	+0.3	+ 8.0
Sewerage	3,918	+0.8	+ 7.9
Bridges	3,353	+0.9	− 0.5
Highways	13,804	−0.2	+ 5.7
Earthwork, Dams and Waterways	11,939	−0.3	+ 1.7
Public Buildings	22,194	+0.2	+ 7.1
Industrial Buildings	17,642	+1.6	+ 3.4
Commercial Buildings	26,510	+1.0	+18.5
Unclassified, Private	10,626*	+0.03	+ 2.9
Unclassified, Public	10,016	+1.4	+ 4.1

* Includes Private Bridges, $95 million.

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1960 May (millions)	1960 5-months (millions)	Percent Change† from 1959 May	5-Mos.
Total U. S. (50 States)	$1,884	$10,708	+15.5	+24.3
By Ownership—				
Private	1,004	5,919	− 4.1	+25.9
State & Municipal	673	4,120	+46.3	+27.9
Federal	207	669	+65.8	− 2.8
By Type of Work—				
Waterworks	38	171	+27.5	−13.7
Sewerage	55	284	+32.2	+ 8.2
Bridges	46	140	+204.7	−32.2
Highways	180	1,463	+185.9	+67.1
Earthwork, Dams and Waterways	22	85	+180.0	−14.3
Public Buildings	310	2,019	+ 2.3	+16.0
Industrial Buildings	464	1,608	+30.0	+ 9.4
Commercial: Mass Housing	358	2,868	− 5.1	+74.7
Other Building	140	1,195	−30.0	+ 8.0
Unclassified, Private	22	248	−77.0	−51.1
Unclassified, Public	229	627	+84.2	+19.0

FLOW OF PROJECTS OUT OF BACKLOG INTO CONTRACTS

Total U. S. (50 States)	$1,013	$4,219	+ 3.5	+ 0.1
By Ownership—				
Private	384	1,651	+26.7	+15.9
State & Municipal	477	1,865	+10.4	+ 2.7
Federal	152	703	−37.6	−27.7

† Based on average week: 21 weeks in first five months of 1960; 22 weeks in first five months of 1959.

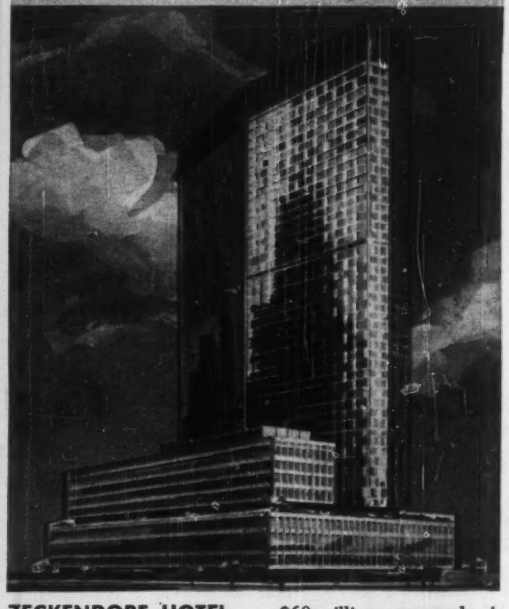
Business and Finance

Ground Will Be Broken for Hotel

AMERICANA HOTEL will get its start with equity cash from a theater chain determined to diversify into more profitable business ventures.

Zeckendorf Maps A Hotel Here

City's First Since '31



ZECKENDORF HOTEL, a $60-million proposal, is bogged down because of mortgage financing difficulties.

Three Hotels Race for 'First';

Three hotel developers are vying with each other to label a project "the first hotel completed in New York City in 30 years."

The owner who first succeeds in claiming that title for his building also will have been the first to obtain financing—no easy trick in a period of tight money and extremely cautious investors.

The announcements came in relatively rapid succession from William Zeckendorf, Sr. of Webb & Knapp, Inc., in February 1959; from Louis J. Glickman of the Glickman Corp. last month; and from Laurence A. Tisch of Tisch Hotels, Inc. and Loew's Theatres, Inc., last week.

The proposals:

• **Mr. Zeckendorf**—A 48-story building containing 2,000 rooms. A unique innovation is the inclusion of 240,000 sq ft of office space. The office section would be in the first six stories of the building. Although it will be an integral part of the structure, the office area would have a separate entrance and would be operated separately from the hotel business.

• **Mr. Glickman**—A 21-story, 448-room hotel extending between 42nd and 43rd streets on Manhattan's West Side. Estimated cost, including land, is $9.5 million.

• **Mr. Tisch**—A 21-story building containing 800 rooms. Estimated cost, including land, is $25 million.

Construction contracts for both Mr. Glickman's "River View" Hotel and Mr. Tisch's "Americana of New York," are held by Diesel Construction Co., Inc., of New York City.

Mr. Zeckendorf, who led the parade of hotel announcements, may also be the first to abandon the idea, even though a $60-million construction contract went to George A. Fuller Co. of New York City last year. Excavation of the site, on the Avenue of the Americas (Sixth Ave.) between 51st and 52nd streets, has been completed, but no further work has begun.

Financing is admittedly the stopper, even though Prudential Insurance Company of America has agreed to provide about $27.5 million of the permanent financing. But the $35 million still required appears to be some distance away.

Right now plans are "being modified," but what this reported modification entails is not being disclosed by Webb & Knapp or its hotel-operating subsidiary, Zeckendorf Hotels Corp.

There are indications, however, that the hotel may turn out to be an office building carrying a much smaller price tag. The site itself, and the original plans for the hotel-office combination fit neatly into that possibility.

The 42-story Time-Life Building is one block below the Zeckendorf site, and the Equitable Life Assurance Society Building, also on the Avenue of the Americas, is just across the street.

Should Mr. Zeckendorf drop the hotel idea and move ahead with an office building, plans for the land would have executed a complete circle. In 1953 Knickerbocker Development Corp. proposed a 35-story office building to cost an estimated $15 million. Then in January 1958, a new owner, Galbreath Corp. of New York City, awarded a $40-million construction contract to Turner Construction Co., New York City, for a 60-story office building on the site.

RIVER VIEW HOTEL, as the other two, is scheduled for completion sometime next year, with financing provided by a syndicate and a standard mortgage.

Money Will Help

That contract was canceled in October 1958 when Galbreath could not complete financing arrangements, and Webb & Knapp acquired the land. The hotel announcement followed.

Although a start on construction of the $60-million hotel appears to be in doubt, two other hotel proposals by Mr. Zeckendorf apparently are moving ahead. One calls for construction of a $10-million, 15-story addition to the Hotel Taft on Seventh Ave. at 50th St., and the other for a $3.5-million annex to the Hotel Drake on Park Ave.

The addition to the Taft Hotel will be located on the site now occupied by the Roxy Theater. The theater is now closed; demolition of the building is expected to start within 60 days.

Mr. Glickman expects to pay for construction of the River View Hotel with funds obtained through syndications and conventional mortgaging procedures. Partners in the syndicate venture will provide the largest chunk of the required money—$4.8 million. A first mortgage of not more than $3.25 million will be given to a financial institution to cover most of the remainder.

Spokesmen for the Glickman Corp. indicate that most of the equity funds are readily available, so it's possible that the mortgage financing may be obtained fairly quickly.

Mr. Tisch's Americana Hotel was heralded in a style befitting the organization he and his associates have a strong hold upon—Loew's Theatres, Inc. While half a dozen hard-hatted construction workers sipped champagne under a hot noon sun to the cackles of other hardhats perched along the frame of a building across the street, Mayor Robert F. Wagner broke ground with the usual ceremonial shovel.

The site on Manhattan's East Side—Lexington Ave. and 51st St.—was formerly occupied by Loew's Lexington Theatre. That structure's fate probably foretells similar endings for other theater properties in the Loew's national chain. The Tisch brothers say they have plans for six other hotels or motels, which also will be owned and operated by Loew's Theatres. They may not all be at sites now claimed by a theater, however.

For the New York hotel and the others, a large bundle of equity cash is available—$50 million in the Loew's till. That's an amount even comedian Jerry Lewis, who added his wisecracks to the ground-breaking ceremony, can't laugh off.

Laurence Tisch, president of Tisch Hotels, Inc., and a director and chairman of Loew's executive committee, says, "Permanent financing will be no problem."

The weight of business statistics will probably be working for the New York City venture. The evidence comes from Horwath & Horwath of New York City, accountants for the hotel industry association and major hotels throughout the nation.

It reports that 1959 earnings of 100 representative hotels in the country have declined to 5.59% of fair value of hotel properties. It was the fourth consecutive drop. But in New York City, earnings as a percent of fair value are much above average.

Occupancy rates also have declined since 1956. In that year, the rate in 400 hotels was at 72%. In 1959 it was down to 66%. New York City, however, has a rate above the average.

Moreover, increases in room rates since 1956 have more than offset the national drop in occupancies, so room sales of New York City hotels are also proportionately above the sales volume average.

Kaiser Affiliate Charged With Antitrust Violation

The Federal Trade Commission this week accused a Kaiser Industries Corp. affiliate—Permanente Cement Co. of Oakland, Calif.—of buying out building material competitors in violation of the Clayton Antitrust Act.

The acquisitions cited by FTC were Permanente's purchase of the Olympic Portland Cement Co., a British corporation, and a purchase of Pacific Building Materials Co. and its sister company, Readymix Concrete Co., both of Portland by Permanente subsidiary Glacier Sand & Gravel Co., of Seattle. The purchases of controlling stock interests were made by Permanente and Glacier in 1958 and 1959.

Olympic and Pacific-Readymix, according to the FTC complaint, were competitors of Permanente and Glacier before their acquisitions, with the net effect that building material competition on the West Coast has been "materially and substantially reduced." Permanente's 1957 sales were over $50 million, the agency found.

Permanente and Glacier this week denied the FTC charges. The case will reach an official hearing stage some time this summer. The ultimate purpose of FTC's action is to divest Permanente of its acquisitions.

Missile Work Raises Old Issue

- **Is base building a job for construction, or is it an extension of the manufacturer's work?**
- **The government is being forced to face the question as construction concern increases.**

Several of the nation's leading contractor associations and the AFL-CIO Building and Construction Trades Department are using the Davis-Bacon Act as one of the levers to halt invasion of the construction field by aircraft and other missile-making companies.

They are asking the U. S. Labor Department to rule that substantially all missile site work up to the point of making a missile base operative, including installation of equipment, is construction work and is subject to the prevailing wage provisions of the law.

As in the jurisdictional dispute between craft and industrial unions, the gray area between the two extremes of work clearly recognized as construction or manufacturing is where the big controversy lies.

The critical issue is whether installation of equipment for the testing, launching and control of missiles is construction work that should be done by contractors and building tradesmen or an extension of manufacturing that should be done by missile manufacturers and their engineers and technicians.

Implicit in the whole problem is the question of whether the Air Force should change its present policy of putting manufacturers, who are usually aircraft companies, into the driver's seat as prime contractors for all the work for which the Corps of Engineers is not responsible.

Use of government procurement contracts that cover not only the manufacture and delivery of missiles but also the installation of related equipment has long been a trouble maker.

Last month, for example, all construction work at four Atlas missile launching sites near Cheyenne, Wyo., was brought to a standstill when the International Brotherhood of Electrical Workers picketed the sites in protest against the operations of the prime contractor, Convair Astronautics. Regional representatives of the union said the missile installation work should not be done by a manufacturer under manufacturing conditions but by members of the construction industry under the prevailing wage provisions of the Davis-Bacon Act.

Earlier this month, the same kind of a dispute hit the Atomic Energy Commission's Nevada Test Site, where work is under way on the Pluto and Rover projects.

The Construction Industry Joint Conference moved in on the problem several months ago and the Air Force has since agreed to put Davis-Bacon provisions in its contracts.

This action has forced the issue of officially determining what phases of missile site work are construction work. For the law applies to every contract in excess of $2,000 for "construction, alteration and/or repair, including painting and decorating, of public buildings or public works . . . which requires or involves the employment of mechanics and/or laborers."

The U. S. Labor Department, which administers the Davis-Bacon Act, has the job of making that determination.

Harold C. Nystrom, the department's acting solicitor, drew up for discussion purposes only a set of proposed administrative controls and criteria for Davis-Bacon application to missile contracts. The criteria were sent to interested parties and comments were invited.

A statement of comments and objections to the tentative draft was jointly filed in mid-month by the Associated General Contractors, National Constructors Association, Mechanical Contractors Association, National Electrical Contractors Association and the Painting and Decorating Contractors of America, all of whom are members of CIJC.

The AFL-CIO Building and Construction Trades Department filed its comments last week.

The employer groups, which are highly critical of Mr. Nystrom's approach and specific proposals, have presented the basic argument that "short of the missile itself, the job of preparing the base, installing equipment, erecting the necessary structures, performing electrical work, doing, in short, all of the work necessary for receiving the missile, is the job of construction."

Meanwhile, support for the construction industry position, has come from another quarter. House Majority Leader John W. McCormack (D. Mass.), registering his dissatisfaction with Air Force contractual procedures in the missile program, has told the Air Force it is making a serious mistake in not using the construction industry to the fullest extent possible.

In a letter to the Secretary of the Air Force, he said that missile manufacturers lack the experience or qualification to assume the responsibility of a prime contractor at a missile site, while the construction industry is "uniquely qualified" to handle all the work essential to making a missile base completely installed and equipped.

Senate Minimum Wage Bill Will Affect Construction

Some 400,000 additional construction workers would be brought under the minimum wage and overtime pay provisions of the Fair Labor Standards Act by a bill now moving through Congress.

The new feature of the law was adopted by the Senate Labor Committee last week in approving a minimum wage bill providing for a $1.25-an-hour wage floor to be put into effect over a three-year period.

The construction industry would be affected by the Senate committee bill provision which provides for coverage of all employees in any establishment doing a gross business in excess of $350,000 a year, and which has one or more employees already covered because of their activities in interstate commerce.

Committee officials say the impact of this provision on construction will be very slight, however, because the construction industry is highly organized by labor. The unions have overtime provisions in their contracts, and wage rates generally much higher than $1.25 an hour.

The real intent of the provision is to clarify present law and let both employers and employees know where they now stand. Currently, there is a great deal of litigation because of the vagueness of the present law on this point.

The new provision is rated a good chance of passage, even though the section was deleted from the House bill.

Plasterers End Chicago Strike

Employers drop suit against the plasterers. Other settlements add 10 cents or more to hourly wages

Labor agreements concluded in the construction industry during the last week have provided for wage boosts somewhat smaller than many of those that were negotiated earlier in the season.

Long-term contracts with annual wage increases of 10 cents or more an hour, however, continue to be the general rule.

One of the major settlements occurred in Chicago, where the plasterers called off a 19-day strike after winning their principal demand—the dropping of an employer lawsuit for an accounting of $8 million contributed by contractors to the Chicago Plastering Institute for health, welfare and pension benefits and for industry promotion. Employers had contended that the institute is an illegal arrangement under the Taft-Hartley Act.

The plasterers' new one-year contract contains a no-strike clause. It gives union members a wage increase of five cents an hour and calls for an additional contribution of four cents an hour to the institute, making the total institute contribution 27 cents. The wage boost pushes the hourly scale to $4 an hour.

Meanwhile, strikes over contract demands were wound up in several other areas.

Painters in Washington, D. C., returned to work after a month of idleness. They obtained a 35-cent wage boost in a three-year contract that makes no changes in working conditions. The struck employers had sought freer use of spray guns, an increase in the permissible size of rollers to 10 in. and longer roller handles.

In Miami, however, the carpenters gave up their fight for pension and health and welfare benefits and settled for a 30-cent raise in a three-year contract. Installments are 10 cents each of the first two years and two five-cent increments the third year. The first 10-cent raise puts the union scale at $3.40.

Three carpenter locals in southern Wisconsin were more successful. After a week-long strike, they accepted a two-year contract that gives a 29-cent wage increase in two installment—15 cents the first year and 14 cents the next year.

Aribitration Given Free Rein

The U.S. Supreme Court considerably enlarged the scope of arbitration clauses in labor contracts last week by restricting the right of those who negotiate them to block or whittle down their operation.

It advised the federal courts to keep hands off arbitration cases even if they disagree with the way they are being handled.

In one of the cases of particular interest to the construction industry, the court ruled that the right to contract out maintenance work is not a management prerogative in the sense that it precludes arbitration of the exercise of that right as a labor dispute.

Gist of the new decisions, three in number, is that courts cannot review the merits of an arbitration award or prevent a dispute from going to arbitration unless the labor contract has explicitly removed the dispute from arbitration.

Arbitration of the contracting out of maintenance work was raised by the steelworkers union in a dispute with Warrior Navigation Co. under a labor contract that specifically excluded from arbitration all matters 'strictly a function of management."

The dispute arose when Warrior contracted out major repair work on its barges. The company claimed that the dispute was not subject to arbitration because the right to contract out was a management prerogative.

Justice William Douglas, rejecting Warrior's claim, noted that the labor contract contained a no-strike clause and said: "When an absolute no-strike clause is included in the agreement, then in a very real sense everything that management does is subject to the agreement . . ."

"A specific collective bargaining agreement," he added, "may exclude contracting-out from the grievance procedure. In the absence of any express provision the court should view with suspicion an attempt to persuade it to become entangled in the construction of the substantive provisions . . ."

OFFICIAL PROPOSALS

Bids: July 28, 1960

Grand Trunk Western Railroad Company
Coonstruction and Relocation of Miscellaneous Facilities at Blue Island, Illinois

Sealed proposals for the Construction and Relocation of Miscellaneous Railroad Facilities near 139th St., Blue Island, Illinois will be received from bidders by the Grand Trunk Western Railroad Company, 131 W. Lafayette Blvd., Detroit 26, Michigan until 12:00 o'clock noon on July 28, 1960. Bids will not be publicly opened.

Plans, Specifications and Form of Tender may be obtained from the office of Mr. C. J. Morris, Chief Engineer, upon receipt of $25.00 deposit per set, which deposit will not be returned. Proposals shall be submitted, marked as indicated upon the Form of Tender and accompanied by a certified check or bid bond in the amount of five (5) percent of the bid. The accepted bidder will be required to execute performance and lien bonds and obtain insurance as provided in the contract documents.

Principal items of work include construction of a Yard Office (22' x 82'), Car Repair Building (26' x 76'), Scale Pit and Approaches (14' x 87') and sewers, water and power lines and appurtenances. Relocation of Sand Tower, Fueling Facilities and small structures are also involved, as is construction of embankment for tracks and roadway and roadway surfacing.

The Grand Trunk Western Railroad reserves the right to reject any or all bids.

C. J. Morris
Chief Engineer

Bids: July 14, 1960

Dredging at Berths 3 and 19 City Channel

THE PORT OF NEW YORK AUTHORITY
PORT NEWARK
CONTRACT O & M 592

Sealed proposals for dredging at Berths 3 and 19 in the City Channel of Port Newark, Newark, New Jersey will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Avenue, New York 11, New York, until 11:00 A.M., Thursday, July 14, 1960, at which time and place said proposals will be opened and read.

Contract documents may be seen at the Office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon request.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, June 30, 1960

OFFICIAL PROPOSAL

RATE: $2.40 per line (or fraction) per insertion.

CLOSING DATE: 10:30 a.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, P. O. Box. 12, New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: July 14, 1960

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, sealed proposals will be received until ten-thirty o'clock A. M., advanced standard time, which is nine-thirty o'clock A. M., eastern standard time, on the 14th day of July, 1960, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1; G. L. NICKERSON, District Engineer, 353 Broadway, Albany, New York						
Essex (Rte. 28N)	R.C. 60-123	County Line-Aiden Lair, Pt. 1, S.H. 658 Minerva-Aiden Lair, S. H. 5186 Aiden Lair-Newcomb, Pt. 1, S.H. 5187	6.90	Asphalt Concrete	$12,000 Plans $5	$223,000
Rensselaer (Rte. 154)	R.C. 60-54	Spring Ave: Troy-Poestenkill, S.H. 571	0.35	Asph. Conc.=0.30 Mi. Misc. Work=0.05 Mi.	$3,000 Plans $5	58,000
Warren (Rte. 9N)	R.C. 60-111	Bolton Landing-Sabbath Day Point, Pt. 2, S.H. 1718	5.02	Asphalt Concrete	$11,000 Plans $5	204,000
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Montgomery	U.S. 104	Lock 13-E, Erie Canal near Randall	....	New Lock Gates, Lowering Sills and Misc. Work	5% of Bid Plans $10	Not Published
DISTRICT No. 3; E. E. TOWLSON, District Engineer, 333 E. Washington St., Syracuse, New York						
Oswego (Old Rte. 57)	R.C. 60-122	Fulton-Oswego, S.H. 5382	7.50	Asph. Conc. Type 1A	$4,500 Plans $5	78,000
DISTRICT No. 4; B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Ontario (Rte. 245)	R.C. 60-119	Rushville-Gorham, S.H. 662; Gorham-Stanley, Pt. 1, S.H. 203; Gorham-Stanley, Pt. 2, S.H. 1196; Stanley-Geneva, S.H. 636	7.56	Asphalt Concrete	$17,000 Plans $5	300,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court Street, Buffalo 2, New York						
Chautauqua & Erie (Rte. 5 & 20)	R.C. 60-107	Irving-Silver Creek, S.H. 5452	0.07	Rehabilitation of Bridge Steel Truss 2 Sp. 267' Total	$4,500 Plans $5	79,000
Erie (Rte. 240)	R.C. 60-120	Aurora-Glenwood, Pt. 2, S.H. 751	6.15	Asph. Conc.=6.06 Mi. Misc. Work=0.09 Mi.	$28,000 Plans $5	501,000
Niagara (Int. Tour. Rte. 190)	FINIE 60-2 NIE 60-3 FARC 60-126	Interstate Route 506, Niagara Expressway (Contract 2) Suspension Bridge-Lewiston, S.H. 475 Project I-190-1(3), (U-461(11)	0.92 (1.78 Acc.)	Grading=1.71 Mi.; 9" Cem. Conc. Pavt. 2 @ 24'=0.32 Mi.; Asph. Conc. Pavt.=0.12 Mi.; Asph. Conc. Type 2B Pavt.=0.08 Mi.; Bit. Double Surf. Treat.=0.11 Mi.; Misc. Work=0.36 Mi.; H.G.S. Comp. WF Beam 3 Sp. 142.67' Total; H.G.S. Comp. WF Beam 3 Sp. 148.0' Total	$50,000 Plans $5	929,000
DISTRICT No. 6; WM J. DENNIS, District Engineer, State Office Bldg., 30 West Main Street, Hornell, New York						
Steuben & Schuyler (Rte. 226)	R.C. 60-116	Savona-Bradford, S.H. 1102 Bradford-Tyrone, S.H. 1420	8.20	Asphalt Concrete	$14,000 Plans $5	245,000
Tioga (Rtes. 17, 17C, 38 & 96)	T.C. 60-4	Owego Village: Park and Front Sts., S.H. 5729; Front St., S.H. 9339; Main St., S.H. 9340 and North Ave., S.H. 9341; Owego-Candor, Pt. 1, S.H. 5420	0.45	Traffic Signals	$5,300 Plans $5	97,000
DISTRICT No. 7, R. W. SWEET, District Engineer, 444 Van Duzee Street, Watertown, New York						
Franklin (Rte. 11)	R.C. 60-112	Nicholville-Moira, S.H. 5284 Malone-Moira, Pt. 3, S.H. 5076	4.79	Asph. Conc. Type 1A	$8,000 Plans $5	149,000
Franklin (Rte. 37)	R.C. 60-124	Raquette River-Hogansburg, Pt. 2, St. Regis Indian Reservation-Fort Covington, Pt. 1, S.H. 8396	4.83	Asphalt Concrete	$12,000 Plans $5	218,000
Jefferson (Rte. 12)	R.C. 60-125	Clayton-Alexandria Bay, S.H. 5304	7.09	Asph. Conc. Type 1A	$13,000 Plans $5	231,000
DISTRICT No. 8, K. G. RAUER, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Westchester (Rte. 22)	R.C. 60-117	Tuckahoe-White Plains, Pt. 1, S.H. 5355	2.42	Asphalt Concrete	$11,000 Plans $5	194,000
DISTRICT No. 9, J. C. FEDERICK, District Engineer, 71 Frederick Street, Binghamton, New York						
Broome (Rte. 17)	R.C. 60-114	Vestal, S.H. 420 Vestal-Binghamton, S.H. 1613	4.75	Asphalt Concrete	$11,000 Plans $5	191,000
Chenango (Rtes. 41 & 206)	R.C. 60-113	Afton-Coventry, Pt. 2B, S.H. 8185 Coventryville-Bainbridge, S.H. 8216	8.10	Asphalt Concrete	$21,000 Plans $5	374,000
Otsego (Rte. 205)	R.C. 60-118	Hartwick-Oaksville, S.H. 8425	5.12	Asphalt Concrete	$10,000 Plans $5	190,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956," being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bond shall conform to the provisions of the Highway Laws, as set forth in "Information for Bidders."

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: July 14, 1960

Soil Explorations and Foundation Investigations

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m., Advanced Eastern Standard Time, on July 14, 1960, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON NORTHERN BOULEVARD, F.A.I. ROUTE 515-1-2, GRAND CENTRAL PARKWAY TO WHITESTONE BRIDGE APPROACH, NEW PROJECT NO. 1-678-1(7), ITEM 30, QUEENS COUNTY, WHICH CONSTITUTES CONTRACT SPEC. NO. FA-SM-166.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.

(b) Mr. Austin M. Sarr, District Engineer, New York State Department of Public Works, 325 West Main Street, Babylon, Long Island, New York.

(c) Mr. William Mende, Principal Building Construction Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. Refunds of deposits for plans, specifications and proposals will be made only in case the deposit of individual sets is $10.00 or more, per Chapter 835, Laws of 1960.

The Engineer's Estimate of cost for this work is $47,325.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
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OFFICIAL PROPOSALS

Bids: July 14, 1960

Grand Central Parkway Reconstruction

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m., Advanced Eastern Standard Time, on July 14, 1960, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON GRAND CENTRAL PARKWAY RECONSTRUCTION, NORTHERN BOULEVARD TO KEW GARDENS, QUEENS COUNTY, WHICH CONSTITUTES CONTRACT SPEC. NO. SM-167.

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, New York.

(b) Mr. Austin M. Sarr, District Engineer, New York State Department of Public Works, 325 West Main Street, Babylon, Long Island, New York.

(c) Mr. William Mende, Principal Building Construction Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. Refunds of deposit for plans, specifications and proposals will be made only in case the deposits of individual sets are $10.00 or more, per Chapter 835, Laws of 1960.

The Engineer's Estimate of cost for this work is $53,750.00.

Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $3,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law as set forth in "Instruction to Bidders."

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPERINTENDENT OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: See Advertisement

Contracts BP-160.016, BP-210.001 and NYA-970.010

THE PORT OF NEW YORK AUTHORITY

Sealed proposals for the following work will be received at the Office of the Chief Engineer, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on date indicated, at which time said proposals will be opened and read in Room 1108.

Contract BP-160.016—Brooklyn-Port Authority Piers—Pier 10—Storage Building—Deposit $30.00 per set of documents—Bids will be received until 2:30 P.M. on Tuesday, July 19, 1960.

Contract BP-210.001—Brooklyn-Port Authority Piers—Pier 8—Deck Construction—Deposit $30.00 per set of documents—Bids will be received until 2:30 P.M. on Tuesday, July 26, 1960.

Contract NYA-970.010—New York International Airport—Hangar No. 17—Installation of Ground Power Equipment—Deposit $30.00 per set of documents—Bids will be received until 2:30 P.M. on Tuesday, July 19, 1960.

Contract documents may be seen at the Office of the Assistant Chief Engineer for Design, Room 1115, 111 Eighth Avenue, New York 11, N. Y. Documents will be furnished upon receipt of the above deposit (each set including one copy of the Contract Drawings) for not more than three sets to any one company. Additional sets will be furnished upon payment of an amount for each set equal to the deposit indicated above, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, June 30, 1960

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5355) will be received at Fargo, North Dakota, until 10 a.m., Central Standard Time, July 26, 1960, for furnishing labor and materials for constructing foundations and furnishing and erecting steel towers for Garrison-Jamestown 230-kilovolt Transmission Line, Transmission Division, North Dakota, Missouri River Basin Project. Location in Mercer, McLean, Burleigh, Kidder, and Stutsman Counties, North Dakota. Principal items are 14,050 cu. yds., excavation; 7,200 lin. ft., furnishing treated timber piles; 4,200 cu. yds., concrete; 634 bodies, furnishing tower bodies of various heights and types; 1,160,000 pounds, furnishing tower leg extensions; 634 towers, erecting tower bodies of various heights and types; and other work. Completion time 650 days. For particulars, address Bureau of Reclamation, P. O. Box 2553, Billings, Montana; P. O. Box 1993, Fargo, North Dakota; or Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-5357) will be received at St. Paul, Nebraska until 10 a.m., Central Standard Time, July 28, 1960, for furnishing labor and materials for Arcadia Diversion Dam and Sherman Feeder Canal, Station (−)49+50.16 to Station 24+00, Farwell Unit, Nebraska, Middle Loup Division, Missouri River Basin Project. Location near Arcadia, Nebraska, in Custer County. Principal items are 495,000 cu. yds. excavation; 6,200 cu. yds. concrete in structures; furnishing and installing 15 radial gates and hoists; and other work. Completion time 865 days. For particulars, address Bureau of Reclamation, P. O. Box 143, St. Paul, Nebraska; Building 46, Denver 25, Colorado; or Building 53, Denver Federal Center, Denver 25, Colorado. Floyd E. Dominy, Commissioner.

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Superintendent - Engineer - Foreman. Sewer-roadwork. New York area. Address experience resume to P-4565, Engineering News-Record.

Flood Control Engineer: A registered profes-sional engineer between age of 30 to 45 years with experience in hydrology and hydraulics. Starting salary $10,000.00 per year with car furnished. Applicant should have ability to take over complete charge of office. Apply with complete resume of experience and qualifications to Board of Flood Control Commissioners, City Hall, Indianapolis 4, Indiana.

Airport Design Engineer. Experienced gradu-ate, manage production office airport design Santiago, Chile. Foreign experience, knowledge Spanish desirable. Send resume, references. P-4686, Engineering News-Record.

Cost Engineer—for supervision of entire cost accounting system for leading building and heavy construction firm, principal office in N.Y. Metropolitan area. Minimum 5 years experience in cost supervision and analysis required. Reply with complete resume to P-4615, Engineering News-Record.

Highway Junior Engineers for State of Con-necticut. New half-billion dollar construction program now in planning and design stage. Opportunities galore for planning, design, traffic. Excellent working conditions. Modern air-conditioned building. Steady professional advancement. Chance to participate in program of full-time graduate study at Yale (Traffic School) while receiving full salary. Merit exam. will be given throughout the U. S. at locations convenient for applicant. Write to State Personnel Department, Room 405, State Office Building, Hartford, Connecticut.

Teaching and Research Assistantships are available to qualified students while working for M. S. or PH.D. degree in either solid or fluid mechanics. Write, Chairman, Dept. of Engineering Mechanics, University of Kansas, Lawrence, Kansas.

Wanted—Graduate engineer with field inspec-tion experience on general and heavy construction projects. For overseas assignment with long established consulting engineering firm. Permanent employment at salary commensurate with ability. Please send resume and salary requirements to P-4589, Engineering News-Record.

Specifications Writer. Permanent position available immediately with established Midwestern consulting firm. Architectural degree preferred. Moving expenses paid. 3-week vacation. Salary commensurate with ability. Write P-4694, Engineering News-Record.

Assistant or Associate Professor of Civil Engineering to teach prestressed concrete, reinforced concrete and soil mechanics. Applicant must have MS degree and some experience. Salary open. Contact John A. Oakey, N. D. State College, Fargo, N. D.

Construction Superintendent. Architectural finish, Ulster County, New York. P-4737, Engineering News-Record.

• POSITIONS VACANT

Engineers experienced in water and sewage works projects or related fields. Opportunity for permanent connection with long established consulting firm. Please state full qualifications, experience, references and salary requirements. Location Ohio. P-4697, Engineering News-Record.

Civil Engineer—To teach in State College "Highway Technology" program. Phone or write Dean Fred Swan, Ferris Institute, Big Rapids, Michigan.

Cost Accountant—Company 35 miles north of Pittsburgh desires accountant with above-average grades in accounting. Cost accounting experience with contractor or with processor such as quarry, coal stripper or slag company using heavy construction equipment. Must be aggressive and able to initiate changes and improvements. Should have supervisory ability and promotion potential. Write resume and salary expected to: P.O. Box 1071, Butler, Pennsylvania.

Instrument Repair—Top man wanted for Transits and Levels, experienced on centers, circles, axles etc., to work in Westchester County, N. Y. Salary $125-175 per week depending on qualifications. Ph: Harrison, NY—TE 5-2318 anytime, or write P-4712, Engineering News-Record.

County Engineer Wanted: Require registered engineer with highway experience. For more information contact Guthrie County Board of Supervisors, Guthrie Center, Iowa.

Sanitary Engineer for public health program. Salary range $7344-8940. Bachelor's degree and six years experience or Master's and five years experience both including two years in sanitary field. Paid vacation, sick leave, holidays and retirement plan. Opportunities for advancement and security in an expanding program. Write Merit System Council, Kentucky State Department of Health, 275 East Main Street, Frankfort, Ky.

Civil Engineer—Experienced in steel design, prestressed and reinforced concrete design in connection with industrial buildings. Supervisory opportunity with large Mfg. concern for a young responsible engineer. Location—New Jersey. P-4715, Engineering News-Record.

"Civil Engineer to serve in capacity of super-intendent and engineer" for Sanitary sewer and water works. Please reply to: South Stickney Sanitary District, 7801 S. LaVergne Avenue, Oak Lawn P.O., Illinois, Garden 4-6030.

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• POSITIONS WANTED

Sanitary Engineer, 62 years old seeks an active connection. Can work with and handle men and produce results. Broad experience in investigations reports, design and supervision of construction of water and sewerage systems and water and sewage treatment plants. PW-4643, Engineering News-Record.

• POSITIONS WANTED

Field-office engr. layout, supervision, take off, etc. municipal, bldg. and heavy const. large or small firms, single. Location open. E. Brown, 600 N. 71st Ave., W. Hollywood, Fla.

Field or Office Engr., experienced, grad. of 2-yr. Highway and Municipal Tech. College. Young, married and no children. Presently employed o'seas. Desire another o'seas assign't. Excellent ref. Will relocate at my expense. Avail. soon. PW-4633, Engineering News-Record.

B.S.C.E., M.C.E.—25—4 yrs exp. desires position in sanitary eng., site planning or these phases of a large C.E. project. PW-4681, Engineering News-Record.

Executive 15 yrs exp all phases of the busi-ness, field & home office, legal-const background, mgr. atty. admstr. trouble-shooter. PW-4672, Engineering News-Record.

Construction Supt. BSCE, Exp. Mgr. Chf. Eng. Hvy. const. Roads flood control tunnels bldgs. govt. contr. Will relocate, Eiswirth, 3419 Utah, St. Louis, Mo.

Experienced construction superintendent past retirement age desires subordinate job with construction company. Recently completed year job at salary of $13,000.00 per year. PW-4671, Engineering News-Record.

Purchasing Agent. B.S., B.A. Experience: Traffic, Analyst, Equipment Superintendent, general superintendent, and purchasing in trucking, heavy construction and mining. Excellent background, presently employed. Desire change in Midwest or Middle Atlantic area. Write PW-4670, Engineering News-Record.

Project Engineer—Civil—Age 29, 6 yrs gen-eral and heavy construction 1 year post-graduate work soil mechanics desire work in B.W.I., South America or foreign. Single status, French and English. PW-4665, Engineering News-Record.

Construction Superintendent 25 years experi-ence on industrial & municipal work. Power, water and sewage plants from bid to completion. Will relocate. PW-4566, Engineering News-Record.

Available Executive Hydraulic Dredge Civil Engineer. Many years experience in field investigation, estimates, management, consultant. Full time or project basis. PW-4554, Engineering News-Record.

Graduate Civil, 36, 10 years experience steel, conc. design, dredging, construction, field work; speaks French; accept work America, abroad. PW-4616, Engineering News-Record.

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(Continued on opposite page)

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• POSITIONS WANTED

(Continued from opposite page)

Former consultant, 54, highly productive, ample capital, seeks association with established engineering firm, N.Y. City area. PW-4628, Engineering News-Record.

Party Chief & Inspector—Diversified experience—single, desires position USA or overseas. PW-4591, Engineering News-Record.

Gen. Supt. 30 years experience in heavy construction. Prefer earth moving, rock or dam and levee work. Will relocate. PW-4588, Engineering News-Record.

Japan—Civil Engineer, 32, experienced in highway and airfield construction seeks responsible position with firm engaged in construction projects. Specialist in soils . . . capable organizer . . . dependable. Top references. PW-4596, Engineering News-Record.

Technical executive, young, graduate licensed engineer, fourteen years diverse domestic and overseas experience. Presently affiliated major oil company, refining mid-management position, desires change with advanced opportunity, overseas positions considered. PW-4696, Engineering News-Record.

Engineer—20 yrs. exp. design/drafting/est. conc. & steel structures, buildings, & fndtns. Will also consider P.T. or free lance N. Y.-N. J. area. PW-4695, Engineering News-Record.

Engineering Executive. Wide industrial, chemical and civil experience; all phases administration and management. Organize and direct large design jobs or work in consulting and exec. asst. capacities. Proposals, reports, contracts, liaison, trouble shooting. P.E. in 5 States. PW-4725, Engineering News-Record.

Construction Mgr.—Field Supt.—Craft Supt. Age 45, 20 yrs. experience major projects Middle & Far East, Europe & Domestic. Petroleum, Steam Generating, Atomic Energy, Pulp, Chemical. Management duties include contract admin., customer & labor relations, planning, purchasing etc. Field duties include all and or Craft Supervision; strong emphasis on piping & instrumentation. Completing European assignment; available approx. 60 days. Overseas only. PW-4680, Engineering News-Record.

Manager of Construction. Twenty-five years corporate engineer in charge of profitability analysis, cost estimating, scheduling, construction supervision and cost control for major process industry projects. M.S. Civil Engineering. On-time completions, minimum costs, smooth startups. Reply PW-4710, Engineering News-Record.

Civil Engineer, B.S., 15 years experience, highways, streets, parking facilities, design, drainage, quantities and photogrammetry. Project Engineer and supervision of production of contract plans, able organizer. Wishes position with firm having a varied civil practice. PW-4738, Engineering News-Record.

Construction Superintendent 35 years in construction field, 25 years as superintendent on all types of heavy and commercial construction plus A.E.C. and U. S. Corps of Engineers projects. PW-4702, Engineering News-Record.

Construction Engineer, 54, Reg. (Pa., Ala.), B.S.C.E. CE, Extensive heavy, hydro construction experience. Seeks permanent position with engineering firm Virginia, South Atlantic states. PW-4701, Engineering News-Record.

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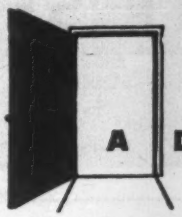
Chief Estimator—Thoroughly experienced in industrial & government work. Cost conscious follow through on estimating, purchasing and sub-contract negotiating. Locate west or midwest. PW-4717, Engineering News-Record.

Aggressive young civil engineer with ten years diversified experience desires challenging position. West coast or Central America preferred. PW-4720, Engineering News-Record.

Contract Manager—Chief Estimator—BSCE from M.I.T. Age 47. 25 years solid background in all phases building and engineering construction. Last six years Chief Estimator large Midwest General Contractor. Wish to relocate and prefer West Coast. Minimum $15,000. PW-4724, Engineering News-Record.



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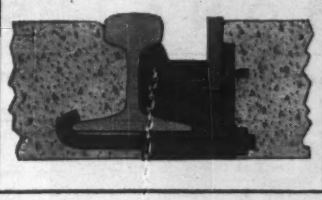

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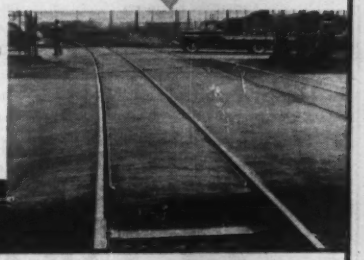

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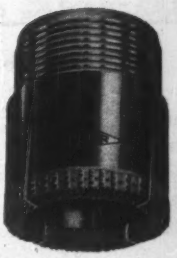

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Professional Soul Searching

CHANGING TIMES are troubled times for the professions. Geared by precedent to a past when social and economic patterns were quite different from today, and when technological development was more evolutionary and less explosive, professional men are finding their business organizations, their work procedures, and even, at times, their prescribed ethical practices inappropriate or inadequate. As a result, all professional people—doctors, lawyers, architects, engineers—individually and as members of professional societies, are looking for ways to adapt themselves, without abandoning professional concepts, to conditions that were unforeseen when their professions were organized—or, if foreseen, were labeled unprofessional.

The latest example of this soul searching is embodied in a report by a committee of the American Institute of Architects. Named the Committee on the Profession, its two-year study of the problems of architectural practice has led to recommendations for changes in education, internship and AIA internal affairs, but most significantly to a change in architectural business relationships. Involved is the increasing role of government in architectural matters, the trend away from individuals as clients to committees and corporation boards, and the emergence of the "package deal" as an accepted device in industrial and commercial circles for the construction of buildings.

Under existing professional rules the architect finds it impossible to fit into the package deal and difficult to compete with it. The committee recommends a broadening of the role of the architect. Instead of just being the design agent of the owner, the architect would become also his over-all planning and administrative agent. Under this concept, says the committee, he could negotiate with promoters, bankers and realtors for their products and services. He also could seek and accept bids from general or specialty contractors and from vendors of equipment and materials or he could decide to build by force account.

A most important outcome of this arrangement, in the committee's opinion, would be that the architect could give a guaranteed price to the owner, just as the package dealers do. In short, the architect would become the effective leader of a team composed of banker, realtor, engineers and builder. And so long as all transactions are carried out for a prearranged fee, with no additional profit motive involved, the committee believes that such a business relationship would be consistent with architectural ethics.

Whether architects generally could carry off this role of master builder, which the committee goes so far as to define as "the control of all design involved with man-made environment," is problematical. Some architects could, but so could some engineers and some builders, as the package deal has demonstrated. It is not title but ability that determines leadership.

From the architect's viewpoint, however, such status-seeking is not without value since it causes him to re-examine his role and his work rules in the light of today's social, cultural and economic conditions. The AIA committee's professional soul searching should foster such a re-examination.

Visitors From Abroad

VISITING ENGINEERS should find their busman's holidays in the New York City area more fruitful if an Engineering Visitors Committee now being organized performs as planned. This new committee of the Metropolitan Section of the American Society of Civil Engineers is being organized as a referral service in the arrangement of trips to local projects. Its service is intended primarily for visitors from abroad.

In announcing the establishment of this commendable new service, the organization's recent past president, Michael N. Salgo, stressed that engineers visiting from abroad have long lamented their inability to see much more than such an inescapable engineering wonder as the Empire State Building. This is undoubtedly true. But the decision to move into this activity might also have been inspired by the extensive, sometimes lavish hospitality frequently enjoyed by U. S. engineers on visits abroad.

Whichever inspired it—recognition of a need or desire to reciprocate—the Engineering Visitors Committee can be a truly professional service, a real force for good. It can help visitors to learn more about our design and construction techniques, our methods and materials. It could also be an aid to their understanding of our beliefs and personalities to the extent that they are taken into our offices, our clubs and our homes—to the extent that the hosts are hosts and not mere guides.

Perhaps New York City sees more visiting engineers from abroad than other U. S. cities, but it also has more local engineers to play host. So if the newly formed committee can be made to work in this great eastern port of entry, it might work as well in cities east and west and in between, wherever visiting engineers need help in getting to see the products of American construction, or local engineers feel the desire to return hospitalities they have enjoyed abroad. The government dams, the Seaway and some of the great bridges, these are the engineering wonders all visitors can get to see readily. But every city has its lesser projects of special interest, and it is particularly those projects currently under construction that are of prime interest to engineers and that require the kind of official entree that a visitors committee can provide.

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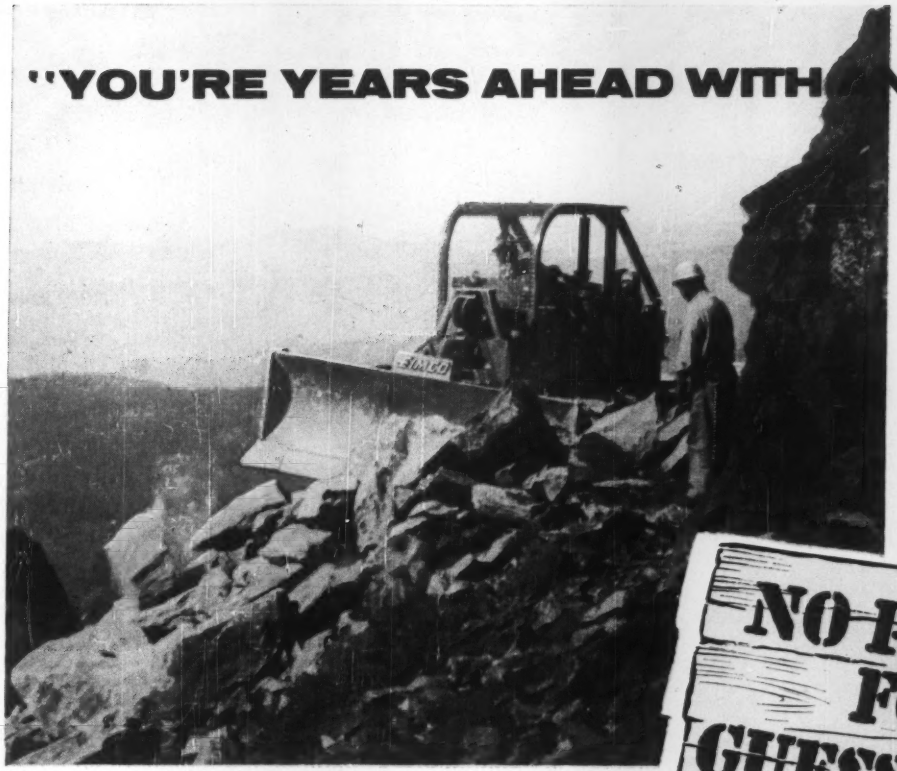

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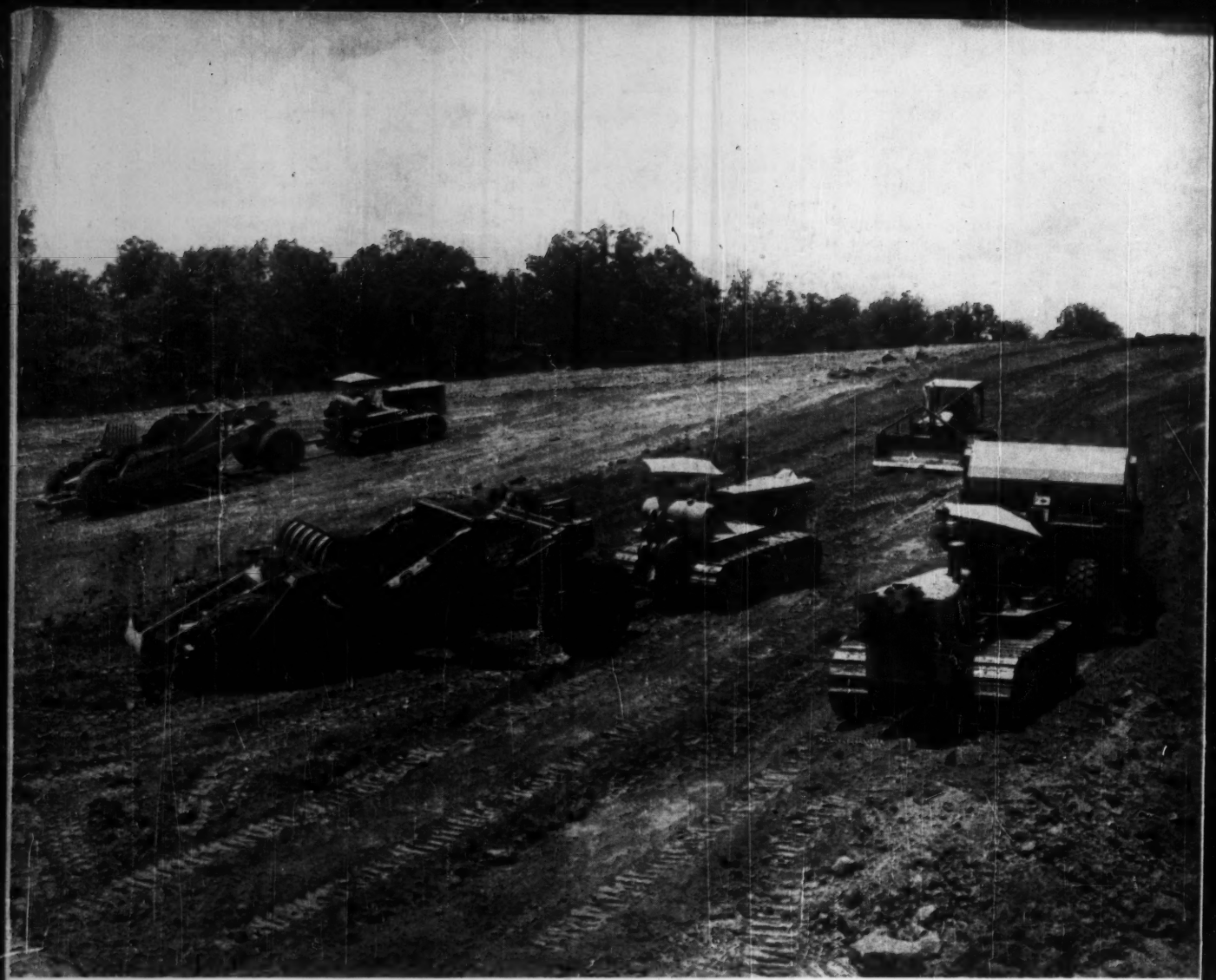

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